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CONSUMERS' RESEARCH

Bulletin

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Symbols used to indicate sources of data and bases of ratings:

A—recommended on basis of quality

AA—regarded as worthy of highest recommendation

B—intermediate with respect to quality

C—not recommended on basis of quality

cr—information from Consumers' Research's own tests or investigations

1, 2, 3—relative prices, **1** being low, **3** high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price.**

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Note: For a detailed account of CR's early history, policies, and information as to the answering of special inquiries about commodities, subscribers are urged to read the INTRODUCTION TO CONSUMERS' RESEARCH, which is sent on request to anyone without charge.

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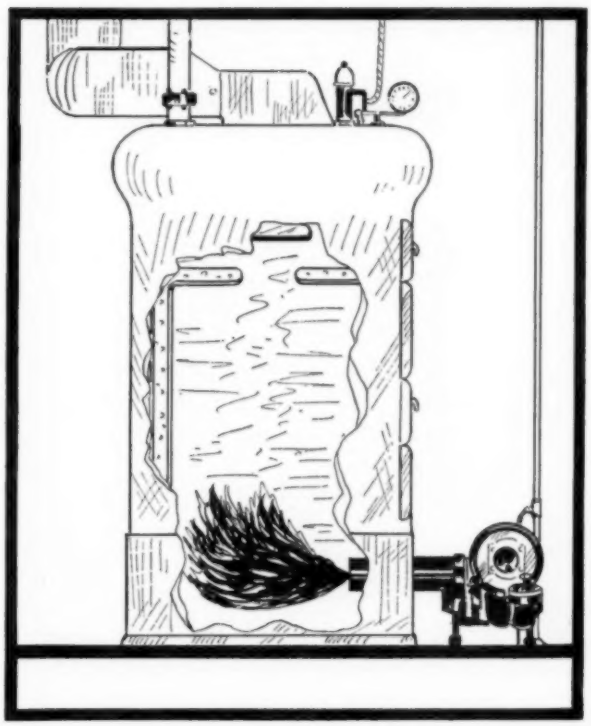
Oil Burners

THE PAST FEW YEARS have seen a surprising increase in the popularity of oil burners—a popularity which may be ascribed principally to the possibilities they afford of practically continuous automatic regulation of the heating supply, so that a heating plant may call for practically no attention, over a period of some months, other than the refilling of the supply tank. In addition, oil burners have the advantage that when properly adjusted they produce little dirt, smoke, or dust inside the house. Heating with oil is generally considerably more expensive than heating with coal because of the depreciation, interest, and service costs of the equipment and the cost of electricity for running the burner motor. Cost of the oil, however, is sometimes less than the cost of coal. 150 to 200 gallons of oil are the approximate equivalent of one short ton of coal. Oil burners and their controls have steadily improved in construction during the last few years so that most of them now give reliable service, with only occasional need for skilled attention of any kind.



Gun-type atomizing burner.

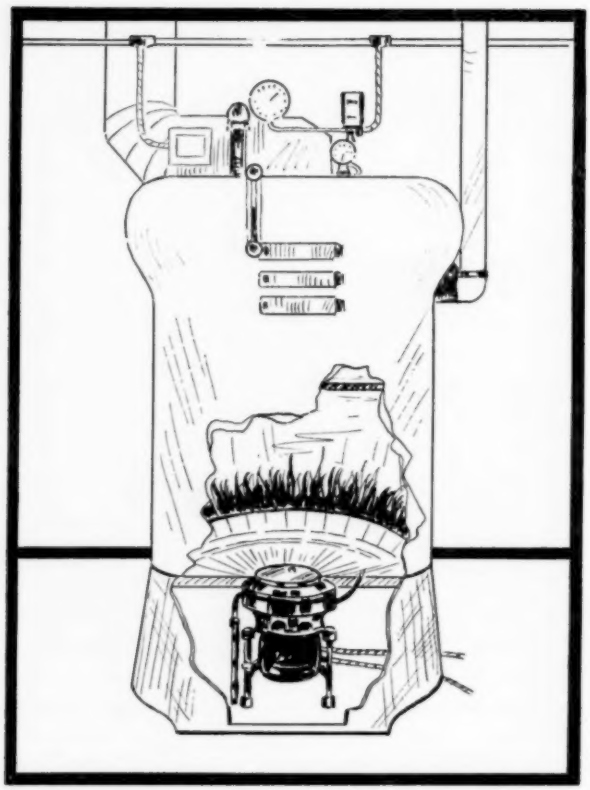
High-Pressure Atomizing Burners

The most widely sold oil burners are of the "gun" type. In these the oil is atomized under a high pressure of 80 to 150 pounds per square inch, which forces the oil through a small opening in the nozzle. From this it comes out as a fine spray; air is blown through this spray and the mixture is ignited and burns.

The most important differences between burners of different makes occur in the methods employed for mixing the air and oil in order to achieve a "soft," "floating" flame with a minimum of excess air. In some burners the air is given a spiral motion to aid in mixing it with the oil spray. Deflecting vanes in the end collar of the blast tube are helpful for this purpose. For maximum effectiveness, each size of nozzle requires a particular size of end collar and vanes. In some kinds of burners, good mixing is accomplished by forcing the air from the outside of the blast tube towards the center and giving it a rotating motion as it leaves the tube, by means of suitably made end collars.

There are other differences between makes of burners which, though less important, nevertheless contribute to good performance. Filters or screens are necessary to keep dirt from entering the oil burner. Cotton or cellulose filters are more effective than metal screens; the latter, however, often give good enough service unless the oil is extremely dirty. The pumps used are nearly always of the internal gear type. For a number of reasons, two-stage oil pumps are considered better than single-stage pumps. The adjustment for air should be such as to permit fine variations in the proportion of air to oil, and should be of such design that a setting when once made remains fixed. The motor should be of ample size and of the long-hour-service type, and it should be provided with a common and inexpensive device affording protection against damage or burnout due to overload.

Care and skill must be used in installing a burner if the cost of heating is to be kept as low as possible. The boiler should be thoroughly cleaned, and all air leaks into the furnace or combustion-space carefully sealed. If the boiler is a sectional boiler having fewer than two intermediate sections, a significant



A vertical rotary burner. That shown is the blue-flame or wall wiping type (the wall referred to is a special wall or ring of refractory material).

improvement in efficiency can be made by adding an additional section. Further improvement in efficiency of small boilers can nearly always be achieved by addition of a baffle made of metal plates and brick hung under the crown sheet or installed in the flue passages. The smoke pipe and chimney should be cleaned of all obstructions and a draft regulator installed in the smoke pipe, preferably with a duct leading out of doors to supply air to the regulator. This device is important in oil-burner installations because it prevents too much air being drawn through the boiler during off-periods, or periods when the flame is not present. Such air, of course, carries heat out of the furnace and up the chimney that would otherwise be useful in heating the house.

A special combustion chamber fitted in the combustion space of the boiler or furnace is a necessity. This should be light in weight so that it becomes quickly heated when the oil burner starts. The nozzle for the burner should be of the proper size for the boiler rather than too large, as has often been the case. The nozzle should be at the proper angle to give a flame that fills the combustion chamber without impinging on the combustion chamber walls.

The air setting of the burner should be such as to provide as little excess air as possible, because air beyond that needed for complete combustion is one of the causes of waste of heat up the chimney. The amount of excess air is determined by analysis of the flue gases for carbon dioxide. A carbon dioxide content as high as 10% or even 12% is obtainable with the better burners. Any installation giving a carbon dioxide content below 8% should be regarded as unsuitable for economical operation.

A certificate showing compliance with Commercial Standard CS75-39 indicates that the burner is of a make that has been tested by the official inspection agency of the oil burner industry and has been adjusted at the time of installation to give not less than 8% carbon dioxide in the flue gas. It is recommended that the purchaser of an oil burner insist as a condition of the sale that one of these certificates be furnished showing compliance of the burner with the Commercial Standard.

The temperature of the gases leaving the boiler or furnace and entering the stack measures how effectively the heat produced by the burning oil has been extracted. A stack temperature greater than 500°F is undesirable. Properly designed boilers with ample heat-absorbing surface and narrow flue passages can give stack temperatures as low as 350 to 400°F provided the oil burner, itself, has been adjusted to consume oil at a suitable, slow rate.

Low-Pressure Atomizing Burners

Low-pressure atomizing burners have more parts and are more expensive than high-pressure atomizing burners, but have certain advantages. They use a larger nozzle, which permits them to burn a heavier grade of oil and, when necessary, at a low rate—less than 1 gallon per hour. This low rate of burning is desirable for a small house of, say, 4 or 5 rooms, or a larger house in a mild climate where the amount of standing steam radiation is 300 square feet or less (corresponding to 480 square feet or less for hot-water radiation). The larger nozzle of the low-pressure atomizing burner has the advantage, though one of minor importance, of diminishing the likelihood of clogging; this is an infrequent

occurrence even with high-pressure burners, unless the oil is unusually dirty. Low-pressure burners have a positive-acting metering device which ensures that once a setting has been made the proper amount of excess air will always be obtained. regardless of any changes in viscosity of the oil. (When the oil becomes more viscous it does not flow so readily through a small pipe or orifice.)

If the heavier oil which these burners can use is obtainable at least 1 cent per gallon cheaper than the No. 2 oil usually used for high-pressure burners—not generally the case in most communities—then the installation of the low-pressure atomizing burners may be warranted in spite of their higher price.

In connection with these burners, it is particularly important that complete 24-hour service be available, for parts generally fit only the particular make for which they are made, and there is not the degree of interchangeability that is found among burners of the high-pressure gun type.

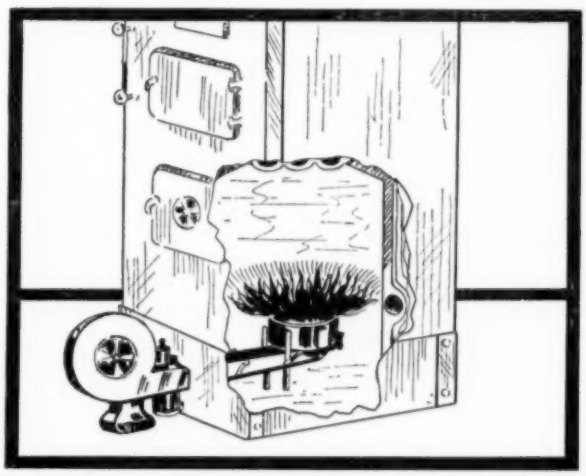
Rotary Burners

Rotary oil burners of the vertical type (in which a cup rotates around a vertical axis) such as the *Timken, Model F*, sell for $50 to $100 more than high-pressure atomizing burners. They produce from 1/10 to 1/7 more useful heat for a given amount of fuel—an improvement in efficiency which would usually be worth while, especially in any fairly large installation. The improved efficiency is gained through the locating of the flame close to the base of the boiler and through burning the oil over a large area, which favors a thorough mixing of the air and the oil spray, produced by the rapid rotation of the cup or disc. With these burners, waste of heat due to excessive air supply can be held to a minimum and the favorable carbon dioxide content of 12% or thereabouts is regularly obtainable.

The vertical rotary-type burner will often be a wise choice for the person who has to install an oil burner in a small round boiler of inefficient design. It should be noted that some vertical rotary burners are likely to be under a disadvantage in the presently developing shortage of stainless steel, because this is the material used for the baffles which are placed around the base of the boiler and which are heated by the flame. These receive the oil thrown by the whirling cup or the disc and vaporize it. Baffles can be made, as they were at one time, of ceramic (baked clay) material, but in that event the fire will be slower in arriving at its full efficiency.

Vaporizing Burners (Pot Type)

One serious objection to the oil burner from the standpoint of the average home owner is its relatively high cost, $180 to $320 installed. Many attempts have been made to produce burners having inherently low first cost, and one type popular on this account has been the pot-type burner. The new models of this type of burner differ from most of the earlier models by having a motor-driven blower to provide air for combustion instead of relying solely upon the variable,



Sectional view of heating boiler equipped with vaporizing burner (pot type).

sometimes uncertain, draft of the chimney. The forced draft has in two ways reduced the handicap of the pot-type burner as against the burners delivering the oil under pressure. It has improved the efficiency of the burner and has reduced the tendency of the pot-type burner to deposit carbon in the pot. The pot still has to be cleaned occasionally during the heating season. Vaporizing burners give most trouble from carbon accumulation in fall and spring when only the pilot fire is on a large portion of the time. No. 2 oil can be burned but gives considerably more carbon deposit and somewhat lower efficiency than No. 1 oil.

These burners are often sold installed in small warm-air furnaces as complete units,

and the price is considerably less, about 1/5 lower than for a comparable complete heating system with high-pressure atomizing burner. Since the amount of fuel oil that can be burned in these units per hour is rather limited, they can be used as a rule only in smaller homes of about 5 rooms or less.

For people who want some of the convenience of oil heat and are willing to undergo the mess and inconvenience of cleaning the pot occasionally, and can get other needed service quickly, the warm-air furnace with a vaporizing burner is a practical way of heating.

The pot-type vaporizing burners are not recommended as conversion burners to be installed in boilers or warm-air furnaces.

High-Pressure Atomizing Burners

A. Recommended

Bettendorf, Models MV and G (Micro-Westco, Inc., Bettendorf, Iowa) 2

Electrol, Model TCV (Electrol Inc., Clifton, N.J.) 2

Johnson, Model BH-0 (S. T. Johnson Co., Oakland, Calif.) 2

Timken, Model GC (Timken Silent Automatic Div., The Timken-Detroit Axle Co., Detroit, Mich.) 2

Toridheet, Model G (Cleveland Steel Products Corp., Cleveland) 2

Westinghouse Spiralaire, Series K (Westinghouse Electric & Mfg. Co., Springfield, Mass.) Similar to *Toridheet*, Model G. 2

Petro & NoKol, Model P (Petroleum Heat & Power Co., Stamford, Conn.) 3

Silent Glow, Air-Seel (The Silent Glow Oil Burner Corp., Hartford, Conn.) Shuts off air through furnace when burner stops, thus conserving heat. 3

B. Intermediate

Burners in Group II are judged to require considerably more care in installation if they are to give as good efficiency in operation as the burners in Group I.

Group I

Bettendorf, Model B (Micro-Westco, Inc., Bettendorf, Iowa) 1

Esso, Model EBS (Gilbert & Barker Mfg. Co., Springfield, Mass.; distrib. Standard Oil Co. of N.J., 26 B'way, New York City) Cheaper than *Model EB00*. Makes somewhat more noise than *EB00*, due to smaller draft tube, but should be approximately as efficient. 1

Airtemp, Model B-10 (Airtemp Div., Chrysler Corp., Dayton, Ohio) 2

Arcoflame, Models C and CF (American Radiator & Standard Sanitary Corp., N.Y.C.) 2

Bethlehem-Crusader (Bethlehem Foundry & Machine Co., Bethlehem, Pa.) 2

Delco, Model B (Delco Appliance Div., General Motors Sales Corp., Rochester, N.Y.) 2

Esso, Models EB00 and EB01 (Gilbert & Barker Mfg. Co.; distrib. Standard Oil Co. of N.J.) 2

Gilbarco, Model GBO (Gilbert & Barker Mfg. Co., Springfield, Mass.) 2

Petro & NoKol, Model P-9-70 (Petroleum Heat & Power Co.) 2

Silent Glow Defender (Silent Glow Oil Burner Corp.) 2

Delco, Model A (Delco Appliance Div., General Motors Sales Corp.) 3

Group II

Aldrich (Aldrich Co., Wyoming, Ill.) This company markets a variety of similar burners. Trade names of some of these are *Little Giant, Heat-Pak, New Departure, Gnome, Fyr-Fly.* 1

Hart, Model HC (Hart Oil Burner Corp., Peoria, Ill.) 1

Hercules Jr., Sears-Roebuck's No. 42—8028. Installations sometimes faulty. 1

Montgomery Ward's No. 181—8117. Installations sometimes faulty. 1

Quiet-Heet, Model B (Quiet-Heet Mfg. Corp., Newark, N.J.) 1

Toridheet, Model S (Cleveland Steel Products Corp.) 1

Herco, Models LV and P (Herco Oil Burner Corp., Lancaster, Pa.) 2

Hercules Deluxe. Sears-Roebuck's No. 272—106. Installations sometimes faulty. 2

Kleen-Heet, Model 711 (Kleen-Heet, Inc., Chicago) 2

Nairoil, Models E and J (National Airoil Burner Co., Inc., Philadelphia) *Model J*, priced about $20 higher than *Model E*, has a better design of elements for mixing air with oil. 2

Quiet May, Models F and NSJ (May Oil Burner Corp., Baltimore) 2

Williams, Model HP (Williams Oil-O-Matic Heating Corp., Bloomington, Ill.) 2

York, Models C and N (York Oil Burner Co., Inc., York, Pa.) The featured iris-shutter of *Model N* gives little, if any, better results than the method used on most other burners for obtaining desired amount of air. 2

Low-Pressure Atomizing Burners

B. Intermediate

General Electric (General Electric Co., Bloomfield, N.J.) 3

Hart, Model DS (Hart Oil Burner Corp., Peoria, Ill.) 3

Williams Oil-O-Matic, Models K150 and K3 (Williams Oil-O-Matic Heating Corp.) Judged best burners of this group. 3

Rotary Burners

B. Intermediate

Silent Glow (The Silent Glow Oil Burner Corp., Hartford, Conn.) 3

Timken Silent Automatic, Model F (Timken Silent Automatic Div., The Timken Detroit Axle Co.) Judged best burner in this group. 3

Toridheet (Cleveland Steel Products Corp., Cleveland, Ohio) 3

C. Not Recommended

ABC Mistolator. 3

A report on boilers for use with oil burners and on boiler-burner units is planned for a later BULLETIN.

Household Porcelain

By O. K. Burger, Ph.D.[1]

PORCELAIN DISHES are of two different types: real porcelain and so-called semi-porcelain. Some sellers make a distinction between the two, calling the first "china," and the second "porcelain." Unfortunately, even this laudable though imperfect attempt to use clear terminology does not reflect a general practice among either manufacturers or dealers. Owing to the widespread confusion of terms and ignorance of the characteristics that distinguish the two kinds of porcelain, consumers are frequently disappointed by bad wearing qualities in the dinnerware they purchase.

Real Porcelain

Real porcelain, or china, has a thoroughly vitrified, non-porous body covered with a glaze of almost the same composition. This glaze is fused onto and into the surface of the ware. True porcelain, therefore, appears translucent when held against a lighted bulb; it gives a clear ringing sound when held lightly by one point and tapped with a pencil. An unglazed border ("bare foot"), found generally on the underside of a plate or saucer, but sometimes, as in cups, around the upper rim, is a fairly reliable and easily observed sign of real porcelain. The presence of an unglazed border is due to the manner of manufacture.

The glaze on real porcelain is fused in a second fire, called "glost fire," of high temperature, much higher than the temperature at which the body itself was fired (the first firing was lighter so as to keep the body porous). In this second firing, temperature is so high that the ware gets soft and would lose its proper shape if it were not well supported along a rim or border on a flat surface in the oven. The glazing material has to be scraped off carefully from this rim or border before the ware is fired, else it would melt and glue the piece to the supporting surface.

The unglazed rim feels rough to the touch and in the store may be dirty. Of course, the unglazed rim can be easily imitated, and unfortunately it sometimes is, as a device for cheating the unwary. I have seen a most conspicuous rough rim on the underside of saucers of Japanese semi-porcelain, put there evidently in imitation of the appearance of real porcelain, but the experienced person has no difficulty detecting the fraud by the lack of translucency and the dull sound which is given off on tapping. The buyer, therefore, who wishes to run no risk of being cheated, must look for all three signs of real porcelain, the "bare foot," the light shining through, and the clear sound when struck.

Semi-Porcelain

Semi-porcelain (fine earthenware) differs from true porcelain by having a porous body which is not vitrified and which is therefore opaque or only slightly translucent to the strongest light.[2] The glaze is of different composition from the body and has a low melting point; it is fused onto, not into, the surface. The temperature of the "glost fire" is much lower than the temperature of the first fire (made possible by special glaze-ingredients—alkalies and even lead being used to lower the melting point), and the ware, therefore, is in no danger of warping. In the "glost fire" semi-porcelain is generally supported only on the points of three clay pyramids, which, indeed, get stuck on but are easily broken off afterwards. The glaze covers the whole piece, except for the three tiny tell-tale marks on the underside, which can always be found if one looks for them carefully. Thus, the identifying signs of semi-porcelain are: the three irregular spots, opacity, absence of an unglazed rim ("bare foot"), and a dull sound when tapped.

Because of the differences noted, the glaze on semi-porcelain does not stick to the body any too well. To make it hold on, it is generally made in such a way that it contracts a little more than the body in cooling from the "glost fire"; it is "shrunk on," and consequently is always more or less under ten-

[1] We regret to announce that Dr. Burger has died since this article was received by CR.

[2] Customs authorities distinguish two types of ware only, vitrified and non-vitrified, and they test for vitrification by dropping red ink along the fracture of a broken dish. If the ink is not absorbed but can be wiped off, the ware is vitrified; on the semi-porcelain or non-vitrified ware, the ink will be absorbed and cannot be removed by wiping the broken suface. On the other hand, there are degrees of vitrification, so that the test in inexpert hands is not a conclusive one.

sion. In use, all household ware is regularly subject to sudden and great changes of temperature. It is only real porcelain that can withstand unimpaired this rough treatment for long.

The glaze of semi-porcelain, being "stretched" over the body, will sooner or later develop tiny cracks all over the surface. These fissures are open and allow fat, oil, and grease to penetrate through the glaze into the body, where they spread laterally (since the body is porous). In time the cracks become unpleasantly conspicuous and no amount of washing can make the dishes look clean or presentable. The poor and half-clean appearance of even carefully washed semi-porcelain ware may be partly responsible for the low standards of dishwashing which some have noted.

The disadvantage is more than superficial, for the oil and grease in the body of the ware below the glaze may come out again through the cracks when food is placed on a dish. The old fat, of course, becomes rancid, and protein substances which are absorbed with the fat are decomposed, changing into substances known as ptomaines (believed at one time to cause what used to be known as "ptomaine poisoning"). Naturally, the quantities of these unpleasant or harmful materials are minute. Nobody has yet died from eating out of a cracked dish, nor is anybody ever likely to do so; but a more or less constant diet of even minute quantities of food contaminated by ancient food residues is hardly conducive to health.

Wearing Qualities of Real and Semi-Porcelain

Semi-porcelain is less resistant to shock than is real porcelain. It is more easily chipped by the unavoidably rough handling which nearly all dishes receive in the kitchen and pantry. If a piece is broken off, the exposed body, being porous, will suck up greasy dishwater and produce an ever growing "halo" of repulsive-looking dirt under the glaze. If, on the other hand, a little piece is broken off from a piece of real porcelain, not much harm is done. The body is exposed but, being vitrified, it does not absorb any dirt, and the damaged place can be kept perfectly clean by scrubbing. If a piece of semi-porcelain cracks, without actually breaking, the crack will soon become conspicuous by the greasy "halo" which is formed by the absorption of fat. In real porcelain a crack will stay as a fine discolored line, dirt being lodged in the opening, but not spreading out beyond. The difference in breakability and crackability between true porcelain and semi-porcelain is very real, and the difference in the useful life of dishes of the two materials may easily be so great that the presumed economy of semi-porcelain dinnerware turns out to be no economy at all. Semi-porcelain is all right for decorative pieces and may even be chosen for sets that come out only for big dinners and grand occasions. For practical, no less than for esthetic, reasons, it should be avoided, however, in favor of real porcelain for dinner- and kitchenware used daily.

Semi-porcelain ware, though it may lack visible defects at the time of sale, develops its faults and flaws after weeks or months of use. The extent to which cracks in the glaze occur, with their undesirable results of potential food contamination, depends upon the composition of the glaze and the amount of surface tension which existed within it due to temperatures in firing, and so forth—factors which in any case the consumer is in no position to determine or judge for himself. Both genuine porcelains and semi-porcelains are subject to cracks' developing subsequent to manufacture (depending upon circumstances in the preparation and mixing of raw materials, and the shaping, drying, and firing of the pieces), and some of the extra care required to prevent this type of failure may be reflected in the higher prices charged for some makers' products. A higher price should mean more careful procedure and hence a better product.

Decoration

Most of the porcelain for household use is decorated with colored designs. Some of this decoration is done by hand, but most is done by decalcomania. The colors are first printed on specially coated paper and then transferred to the body which has been fired once. The glaze is put on afterwards and, being fused to a clear transparent glass, unites with the heat-resistant pigments. This type of decoration, "underglaze," is much to be preferred to another type, "overglaze," where the decoration is fused on top of the glaze in a third fire. "Overglaze" can be spotted by the somewhat duller surface gloss of the

decoration and by the roughness which can be felt with the finger or by passing the sharp edge or point of a knife over it. This kind of decoration is rather easily worn off or scratched. It is better to avoid such porcelain for everyday household use as it eventually becomes unsightly. A word of warning against gilded ware is also in order. The gold is usually very poorly held to the glaze and rubs off quickly in places where the fingers touch it, as on the handles of cups and pots.

Relative Prices

Semi-porcelain has been produced chiefly by American industry, while most of the real porcelain for household use has been imported from Europe and Asia. Americans have bought enormous quantities of the non-durable types of dinnerware, although there are ample supplies of the raw materials for a genuine-porcelain industry, evidenced by the fact that parts in wide variety required by the electrical industry, e.g., insulators, spark plugs, etc., are made of high-grade technical porcelain. The public unintentionally assumes that the cheaper article is nearly as good and perhaps lasts as long or nearly as long as the higher-priced real porcelain, being unaware of the very much greater durability and better service which genuine porcelain affords in the home. To look at the problem of relative prices for a moment, the retail price for a cup and saucer of true porcelain may vary from as little as 10 cents for a Japanese product, to as much as $5 for the product of a high-class European maker. A cup and saucer of semi-porcelain may cost as little as 10 cents for the cheapest undecorated ware, or as much as $1 for the best grade (the higher quotations are for modern products, not antiques or special showpieces). It is seen, therefore, that there is a considerable range of overlap between the selling prices of genuine porcelain and semi-porcelains.

The cheaper genuine porcelains, e.g., the Japanese, though thin and translucent are apt to be brittle and break easily and will have irregularities in decoration and shape, blemishes, and discolored spots. The higher-priced European ware is carefully made, and pieces with even slight defects are rejected by the manufacturer and not sent to the market as first-quality goods.

Fashions in Porcelain Ware

As for taste and fashion in porcelain, there seems much merit in the old tradition that china should be pure white and carry only a moderate amount of rather subdued color decoration. After all, dinnerware is primarily for use and not for show.

Overdecorated ware, with flamboyant colors covering the whole piece, raised patterns, and other such deviations from the established or conservative practice are the opposite of helpful in keeping dishes clean. They rather tend to cover up imperfect washing. A white dish is no harder to keep spotless than a colored or decorated one, and it reveals much better any dirt that remains. Further, many vivid colors can only be produced in glazes of low melting point, and that in turn involves the use of glazes containing lead compounds, which are dangerous from the standpoint of health (see CONSUMERS' RESEARCH BULLETIN, May 1940). Finally, though richly decorated or brightly colored ware may appeal to the eye when seen in the shop, it often will not harmonize with decorations in the home. Elaborate ornamentation in fashion at one period becomes outmoded in another.

Manufacturers of high-grade ware never go in for flashy, up-to-the-minute modernity, but stick to more modest and subdued schemes of decoration, which fit in anywhere and never become really unfashionable. This rule applies equally to porcelain and to semi-porcelain. Excessive decoration and too vivid colors commonly indicate inferior quality.

With imports from overseas largely reduced or entirely cut off or boycotted, real porcelain of moderate price nowadays is somewhat difficult to find. The real porcelain formerly imported from Japan and sold in five-and-ten-cent stores has disappeared. Department stores and specialty shops still have some real porcelain of European make in stock, but their reserves are dwindling rapidly.

Armed with knowledge of how to distinguish between the two types of household porcelain, and taking care to look over each piece for defects, the consumer can acquire good porcelain which, with care, will last a lifetime, or longer.

Home Repair and Maintenance - Part II

This is the second part of an article dealing with home repair and maintenance. Part I, printed in the December Bulletin, dealt with maintenance of floors, and with general repairs and their costs. It also included a bibliography of useful books for the homeowner.

Roofing Repairs

The roof covering has the severest exposure of any part of the house, hence especially calls for inspection at regular intervals. The homeowner should not wait until rain leaks through to correct the defects, for such neglect can be very costly. Accumulations of vegetation and trash should be kept away from valleys, flashings, gutters, and downspouts. This care is particularly important for flat or deck roofs where the backing up of drainage water will almost inevitably result in trouble.

All roof coverings undergo deterioration with time and weather. Asphalt roofing loses its plasticity and pliability. Asphalt shingles become brittle, and finally are so greatly weakened that a strong wind will tear them off the roof. Roll roofing becomes porous and also subject to wind damage. Built-up roofs leak after the asphalt has deteriorated by weathering. Metal roofings may corrode or rust, and develop leaks at seams and nailing points. Both slate and rigid asbestos shingles break or become loose, and sometimes must be relaid because the nails have rusted through. Curved clay tiles may become loosened or broken and are often damaged by the wind; moreover, the water-shedding membrane (heavy felt under-roofing) over which the tile is laid, as a protection against driving rains, deteriorates. Flat-grain wood shingles curl and admit moisture, particularly during a driving rain; both flat- and edge-grain wood shingles become loose if a fairly heavy corrosion-resistant nail has not been used.

In the following paragraphs, directions are given for maintenance and repair of the various types of roof coverings.

Asphalt Shingles

Remove the asphalt shingles and re-cover the roof whenever the shingles have become brittle enough to show serious damage by the wind. Occasional leaks can be repaired by inserting a patch of good roofing paper under the existing shingles and holding it in place with small dabs of roofing cement. This should be done on a warm day. Shingles which have become lifted can also be held down in this way, for a time.

Roll Roofing

Where nails protrude through roll roofing, renail and cover with a strip or with small patches of cloth, cemented on and mopped with roofing cement or thick asphalt roof paint. This work should be done in warm weather. Similar patches can be used to postpone replacement for a time, where the roofing is torn.

Built-Up Roofing

Built-up roofing consists of layers of felt, lapped and cemented together with pitch or asphalt, then coated with hot asphalt and covered with mineral granules, to give protection against the elements and to increase resistance to fire. Every two to five years the mineral covering should be swept into rows, and the surface so exposed should be coated with roofing asphalt. The mineral granules are then redistributed before the asphalt has hardened. All parts of the roof are recoated in this manner. If sheets are puffed they should be cut, re-laid, and re-mopped. Do not nail unless the nail heads are also covered as described for roll roofing.

In some cases the roof is so flat or rafters so light that pools of water will collect, due to the natural sag. To correct this fault, support and lift the sagged rafters from underneath by means of a permanent, well-supported, horizontal timber known as a "strongback," having vertical props extending upwards from it to the rafters. If this

is not possible in any given case, try building up the slope for proper drainage by superimposing a false roof of tapered wood strips covered with light sheathing and prepared roofing, on top of the old roof.

Metal Roofing

Tin-coated and galvanized iron will rust if the coating is worn through or is broken. Red lead paint is a suitable protection, applied in thin coats with a long drying period between. The top coat can be any color of a durable paint if a more modest tone than the glaring red of red lead roof paint is desired,

Curled wood shingles.

or the red lead paint can be tinted with lampblack in oil to a brown or a black shade.[1] Loosened nails should be hammered down and any holes, including holes at nail heads, should be sealed with elastic roofing cement before painting.

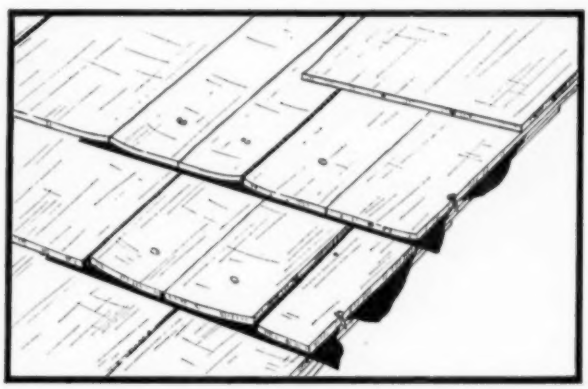
Slate and Asbestos Shingles

Effective repairs of broken pieces are difficult to make. The following method is not highly satisfactory but is a worth-while expedient. Remove the broken shingle. (The nails which held the old shingle may have to be cut with a special tool or else a short slate or asbestos shingle used for replacement.) Nail to the sheathing a strip of fairly thin (about 18 gage) metal sheet (copper when it can be obtained, or zinc), letting it project about ¼ inch beyond and below the shingle course. Insert a new shingle, then bend up the projecting portion of the copper strip over the edge of the shingle to keep the shingle from sliding downward out of place.

[1] The subject is discussed in detail in the December 1941 BULLETIN, under "Painting Metalwork."

Curved Clay Tile

When replacing a tile, nail to the sheathing a loop of 12-gage galvanized wire long enough to be bent over the end of the tile when in place. Then embed the tile in a mound of mortar consisting of Portland cement, sand (proportions of 1 to 3, respectively), and a little lime. After placing the tile, bend up the wire clip to hold the tile in position. When a clay tile roof begins to leak seriously, it is best to remove all the tile and mop on a new composition sub-roof. The tile can then be replaced.



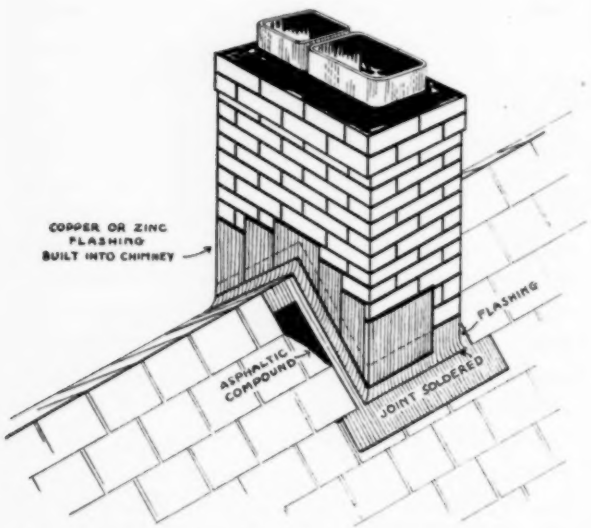
A method of correcting leakage on a roof having badly curled wood shingles.

Wood Shingles

If wood shingles are badly curled, the chances are they are flat grain (sawn parallel rather than perpendicular to the growth rings of the tree). Replacements should be made with vertical grain red cedar, cypress, or redwood shingles. To correct leakage due to curled shingles, break them in two by hammering them lightly. Place a piece of heavy roofing paper under each new split, and nail down the pieces of shingle with short galvanized-steel or copper nails. Since a properly laid roof will always be at least three shingles thick at every point, whether laid over spaced or solid sheathing, careful nailing with short nails will not penetrate it completely to open new leaks. For leaks not caused by curling of the shingles, insert underneath the deteriorated wood shingle either a strip of heavy building paper or a tin flashing shingle covered with two coats of red lead paint. To mark the point of a leak, go into the attic on a bright day and poke a broom straw through the roof at each point where daylight can be seen. These markers

will permit repairs from the top side. Another test for leaks is to spray with the garden hose; then trace leaks and mark as before with wire or broom straw. The drips should be traced to the highest point where water

How not to do the flashing job at the base of a chimney.



Proper construction of flashing around a chimney.

appears in a line above them along the slope of the roof, for it is to be remembered that moisture may run underneath the roof surface for some distance before dripping onto the ceiling or floor below.

Reroofing

Vertical grain wood shingles are generally the most practical for reroofing, though the original cost per square foot is often more than for composition sheets or shingles. Wood shingles can be applied directly over old asphalt shingles or roll roofing, or over old wood shingles. The double layer has insulating value and avoids the expense and trouble of stripping down to the sheathing. Anyone wishing to reroof in this manner should write to the Red Cedar Shingle Bureau, Seattle, Washington, for detailed instructions. The wood of which shingles are made (principally Western red cedar) is naturally durable and requires no coating or impregnation, although creosote oil is sometimes used to increase the service life through lessening of the tendency to split. Where the type of house is such that the color of naturally aged shingles is pleasing, no staining is needed.

Flashings

Metal flashings at dormers, in valleys, at chimneys and vent pipes must be kept from corroding through and from leaking around the edges. Red lead paint can be used on exposed surfaces which tend to rust, and an asphaltic or mastic calking compound, of the type which retains its plasticity as it ages, can be inserted around the edge of the flashing, where it enters brick or stone masonry. Where a flashing has rusted through it should be replaced. Sheet copper is preferable for this when obtainable; zinc may be used except possibly with wood shingles; terneplate is a less desirable and cheaper substitute.

Plastered Walls and Ceilings

Gypsum plaster, which is the type now used for both under and finish coats, cracks easily and on account of its inflexibility is far from an ideal material for interiors. It disintegrates with moisture and gives trouble in bathrooms, kitchens, and sometimes even in living rooms, when it is exposed to high humidity of the air produced by operating a humidifier or by burning an unvented gas heater.

In recent years the use of wall (plaster) board instead of plaster has greatly increased. When installed correctly wall board gives as finely finished a wall as the plaster type. While wallboard does not crack as readily as wall plaster, it is not an ideal material for the walls or ceilings of rooms where humidity can be very high (e.g., kitchen, bathroom, laundry). In rooms subject to prolonged humidity, ordinary exterior (Portland ce-

ment) stucco plaster trowelled smooth, tile, and tile board appear to be the most suitable materials available.

Cracks

If cracks have just begun to show, mark the ends of several of them with a pencil. Wait for several weeks after they have stopped growing larger before making repairs. Then, if the crack is large, widen it with a knife or screw driver, making a channel which is wide at the lath, narrow at the surface; this shape will key the patch firmly in place. Moisten the edges and base with a small brush or spray gun. Insert patching plaster (obtainable at paint and hardware stores) with a putty knife or other convenient tool, ramming it well, to a level ⅛ inch beneath the surface. After this dries, fill the remainder of the crack with the patching plaster and smooth it flush with the wall surface. After drying, minor irregularities can be removed with fine sandpaper wrapped around a small flat-surfaced wooden block. For any very small job of patching, use plaster of Paris mixed with half water, half vinegar (vinegar being used to retard the natural rapid setting of the plaster). The plaster of Paris paste should be used just as thick as it can be worked. For more extensive work, patching plaster, which needs only to be mixed with water, should be purchased and used as already described.

Crazing of Plaster

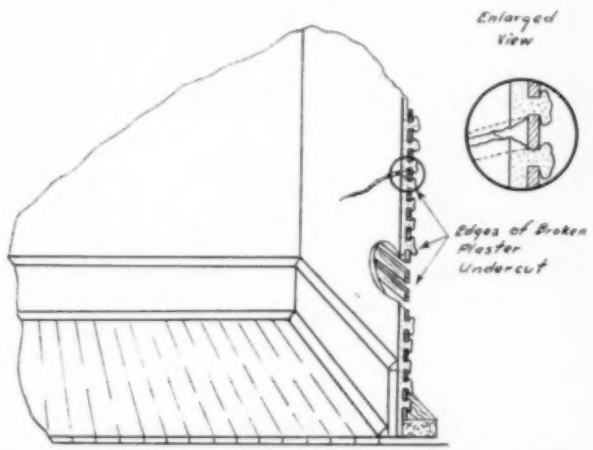
Where there is a small area of fine hairline cracks which form irregular patterns, this can be filled with a paste of white lead thinned with turpentine, rubbed on with a cloth. (As white lead is very poisonous and will gradually come off the wall in the form of dust or fine powder, only very limited use should be made of this method of crack filling.) If the crazing is extensive but the plaster is otherwise smooth and in good condition, covering the plaster with wall paper may be easier than renovating.

Bulging

Where plaster has swollen but remains tight against the lath, the problem is one of too much dampness. If the bulging occurs around a bath tub or sink, the plaster may be covered with linoleum, tile, or a wallboard of the type having a baked-enamel surface. The use at such places of exterior stucco, a Portland cement product, instead of gypsum plaster, has been found satisfactory, although some use of calking putty or similar material may be necessary from time to time where porcelain fixtures are close to or in contact with the wall. If the dampness is due to a leaky roof or outside wall, a permanent job of correcting the leak should be done before plaster repairs are attempted.

Loose Plaster

Small areas of plaster that are loose should be removed and the place patched. Screws



Preparing a break or large crack in plaster for repair with patching plaster.

and large washers used for fastening loose sections of plaster are unsightly and at best are a temporary expedient, for they do not securely key the plaster to the lathing. On ceilings, such attempts to make mechanical repairs of plaster may be dangerous, for in spite of them large areas may break loose and fall, injuring people and damaging furniture. Where ceiling plaster is loose and in poor condition it may be covered with plywood or a good sheet of rigid insulating board. These can be applied over the plaster, saving the cost of removal and increasing the insulation value of the construction. Wood nailing strips running crosswise to the ceiling joists are placed on top of the plaster which is to be covered, and firmly nailed to the joists. These strips hold the old plaster in place and provide a secure base to which the new plywood or insulating board covering can be attached. Complete replastering is another possibility, but one which may prove costly, for to do such a job the room

must be completely vacated for about two weeks. It would be necessary also to remove the old plaster, and probably the lath, too, and to protect hardwood floors very carefully, for bits of fresh plaster dropped by the plasterer will make stains that are almost impossible to remove. A replastered surface should not be painted with an oil paint or papered until it is thoroughly dry, preferably at least a month after it is installed. Water paints with a casein binder, however, can be satisfactorily applied to plastered walls that have not thoroughly dried. Such paints of course have certain limitations, principally in the showing of dirt and finger marks, and the fact that such dirt is often difficult or impossible to remove by washing or any other practicable method of cleaning.

Wallpaper

Before repapering, see whether the old paper cannot be made to serve. In many cases, inexpensive repair work will make repapering unnecessary. Paper itself does not disintegrate in a dry room, though it may fade or change color with light. If the wallpaper is soiled due to a leaky smoke pipe, or loosened because of a damp wall, correct these conditions before repairing it.

Loose Paper

Peel loose edges as far back as they will lift without tearing. Moisten the back of the paper with white library paste which has been thinned with water to a free-flowing consistency. A water-color brush may be used to apply the paste. Refasten the paper by rubbing toward the edge with a soft cloth or brush until every portion is in full contact with the wall. Any discoloration due to moisture will disappear on drying. Use the paste sparingly, so that it will not flow out of the edge to smear the patterned surface. Where a "blister" appears in the middle of a sheet, slit it with a razor blade and repaste both sides as above; when neatly done, the slit will not show after drying. Where work is extensive it will be worth while to reduce expense by use of the regular wallpaper paste used on new work.

Soiled Paper

At some inconspicuous part of the wall, clean a small area of the paper with "Art-gum" eraser; the result will show whether the paper is worth cleaning all over. For an entire room, buy prepared wallpaper cleaner. This is available at 19 cents for 2¼ pounds from the large mail-order houses, and under various brand names at somewhat higher prices from paint stores (e.g., *Absorene*, 15c for 12 oz, made by The Absorene Mfg. Co., St. Louis; Wall Paper Cleaner, 25c for 12 oz, made by Pittsburgh Plate Glass Co., Pittsburgh). To use, "erase" the wall, kneading the dough frequently to bring out a clean surface. Use until the dough is thoroughly soiled. Some care is required to avoid streaking of the wallpaper. This cleaning method will in most cases refresh plain or durably printed paper. To remove oil and grease spots, apply a paste made by mixing fuller's earth with a volatile cleaning solvent like carbon tetrachloride (*Carbona*), allow to dry and then brush off. For obstinate spots, several applications may be required. (The cleaning solvents are all poisonous to breathe; some may be flammable or explosive, as well.) If a grease spot is fresh it can sometimes be removed by placing a piece of clean white blotting paper over the spot and pressing a warm iron against it.

Torn Paper

If there is a section of the wall from which the paper has been torn, or if there is a soiled spot which cannot be cleaned satisfactorily, that part of the wall may be covered with a patch torn from a remnant that probably was saved when the room was papered. Tear out the patch of paper with a wide "feather-edge" on the reverse side. Paste down the original paper where loose, then paste the patch over the top in such a way that the pattern matches. This can be done so as to be hardly noticeable, unless the paper on the wall has faded.

Removing Paper

If the original paper is completely free from physical damage or defects, new paper can be placed directly over it. But where there is already more than one layer, or where the single layer is loose or in very poor condition, the layer or layers should be removed. Anyone inexpert at paper hanging especially needs to be warned that he will risk loosening old paper while pasting on new, thus ruining his work; hence, in case

[Please turn to page 26]

Secondhand Camera Markets

This is the first of two articles on the subject of buying and adapting used cameras; other articles will appear in the future if the topic is of interest to a sufficient number of readers. In a forthcoming installment, we shall continue with a fairly detailed list of names of used camera dealers, with notes on the characteristics and price range of their stocks. (A very few of the most important secondhand outlets are listed at the end of this first article.) In the meantime, we shall appreciate advices from far-western readers giving critical, unbiased comments on used camera dealers in Los Angeles, San Francisco, Portland, and Seattle, with indication of the special characteristics of service and stock of each. Information presently available on West-Coast stores has been very limited.

THE PRESENT TIME is one in which it is peculiarly appropriate for the devotee of amateur photography to consider the purchase of a secondhand camera, if he has it in mind to buy one for future use. The present international situation has had far-reaching and clearly noticeable effects upon the camera market. Prices on secondhand cameras have gone up notably, and selections available to the discerning purchaser who knows his way about in the secondhand camera market are very much less satisfactory than a few months ago. There is every sign, moreover, that the camera market situation will become more and more unfavorable in the coming months.

This comes about partly because those who have good cameras are not now turning them in in trade. For this there are two reasons: one that the incentive for turning a camera in on a better one, as amateur photographers are constantly doing in normal times, is now lacking, for new cameras of high grade are unobtainable in some of the best makes or scarce in ordinary makes, or are selling at much higher prices than formerly, whatever the make. A second reason is that a really good used camera that has been well taken care of may often be worth more today than when it was originally purchased; thus really good cameras are regarded more or less as investments, or as hedges against inflationary price levels in the photographic equipment field.

A case in point is that of the owner of a *Contax* 35mm camera who became tired some time ago of the miniature type of camera and offered his for sale to a number of dealers. The best offer he received was $120. Recently he was offered $170 by a dealer; but now he is holding on to his *Contax*, believing that the increase in its market value may go considerably above $50 already added by the scarcity and inflationary rise in camera prices.

We have long noted that many would-be purchasers of photographic equipment are hesitant about purchasing such equipment at second hand, because they are not conversant enough with the market to judge whether the price asked for a secondhand camera is fair, and whether the camera is in really good condition. In reacting in this way, consumers are forgetful of the fact that new equipment is often in bad condition and that a secondhand camera of a first-rate make and quality is likely to be a very much better buy on the whole than a camera at about the same price of much lower quality and grade, purchased new. To help subscribers who do not feel at home in the secondhand market and do not know how serious or slight are the risks run, CR has studied the secondhand camera markets in Boston, New York, and other large cities over a long period.

Trade Practices of Dealers in Used Cameras

Most stores do not clearly price-mark their used stock, which usually means that asking prices are flexible and depend upon the sizing up of the customer by the salesman, especial-

ly, perhaps, upon what sort of a camera or other equipment the customer has to turn in upon his purchase. Dealers in secondhand cameras do not hesitate to accept used equipment as part of the purchase price of other secondhand equipment. If the customer is prosperous looking and gives no evidence of knowing much about cameras, the price of a secondhand item is likely to be higher than is warranted by the general market for secondhand goods or by the price of the same type of camera new. An easy victim for the sharp photographic dealer is the customer who acts prosperous and as though he were above arguing about a few dollars in the purchase. Such a person will often pay far more for his camera than a man who is a "hard buyer" and does a lot of looking, asking, and comparing before making up his mind.

In buying a used camera, insist upon a proper trial period (usually ten days) within which time the article may be returned for full cash refund; this gives the purchaser an opportunity to make some sort of test of his purchase. Any dealer who declines to permit such a trial for a person who can establish his good faith and financial responsibility and his familiarity with the proper care and use of a camera, may be considered as a doubtful man from whom to purchase. One large New York store, Willoughbys, operates on a full-money-back-within-ten-days plan or will allow a 75% refund on cameras returned in 90 days in good condition.

The unprecedented boom in the last five to ten years in miniature photography (which has attracted many who have taken up the art as a fad or a means of spending money, rather than as a serious pursuit) has had an unfortunate effect on many dealers. Such dealers have been carried away by the ease with which in recent years they could sell cameras at $100, $200, $300, and up, to persons who had the money but little or no photographic sense, and no "horse sense." We recognize, of course, that in the hands of the expert the miniature of fine design and workmanship often has an important place, as a photographic tool of versatility and convenience.

Many dealers who used to be really expert on the selection and use of cameras and were not above selling good secondhand cameras as enthusiastically and readily as new ones, have lost their interest in cameras except as merchandise exchangeable for dollars and have substituted for it a lively feeling for quick turnover and high average sale in dollars per customer. Many dealers have dropped the secondhand camera aspect of their business entirely or pushed it into the background; they handle their turned-in cameras in the easy way by simply disposing of them in lots to job-lot dealers who sell them out of town or take them apart and sell the lens and shutter separately or in some other way, by which they do not enter into direct competition. From the dealer's standpoint, the turned-in cameras are no loss even when he realizes little on their sale because by accepting the turn-in, he has frequently been able to sell a much higher-priced, higher-profit camera to the customer than he would have sold if the customer's outlay had been all in cash.

Camera dealers in general are as honest and fair, perhaps, as dealers in other goods, but the degree of their consideration for the customer's interest has declined sharply in the last four or five years as the average price of cameras has been pushed up and up by the development of numerous luxury miniatures and such high-priced or super-cameras as the *Ektra*, *Linhof Technika*, the *Plaubel Makina's* recent line, and the *Graphics*.

An interesting illustration of dealers' sharp practice was recently reported to CR when a rank amateur was sold at full list price a *Contax* camera with an f:1.5 50mm lens and also an additional f:3.5 lens **of the same focal length** for use with the camera. Two lenses of the same focal length are of no more practical value to any amateur, or indeed to an advanced amateur, than two electric refrigerators or two washing machines would be to a housewife. The strictly fair and honest dealer would have encouraged any newcomer to photography to buy only the slower, low-priced lens with which the camera is normally equipped at its lowest catalog price. The extreme speed f:1.5 lens, though costing over $180, or about four times as much as normal lens equipment, **would be of less value to the ordinary amateur** than the cheaper one (still a very high-priced lens when size and focal length are considered).

This is aside from the fact that anyone who

is really a novice at photography has no business buying a high-priced miniature, and if the person is one to whom the amount to be expended is important, he will do well to start out with a secondhand old-model focusing *Kodak* of the period around 1915 to 1920, or a camera of European make, of similar type. The camera should preferably be one using roll film; some of the best European cameras of this class had a special slide arrangement in the back permitting use of either roll film or a film pack with an adapter, at will. With such a camera, the person beginning serious photography can get all the practice needed, at a fraction of the cost in original outlay and depreciation that would be involved in the purchase of such a camera as the *Linhof Technika* at $245, the *Plaubel Makinas* at $275, or a *Contaflex* at around $300.

General Hints to the Prospective Camera Buyer

When the most camera for the least money is needed, it will almost certainly be found in older style roll-film cameras, e.g., the No. 1A, No. 3, or No. 3A *Kodak* of about the autographic-back era. Cameras of these models had their faults, particularly as compared with the better imported cameras, but many of them can be had with shutters and lenses of the best make and grade, at $12 to $15, often even under $10. If purchased with the slow f:7.7 *Kodak Anastigmat* (which was an extremely good lens except for the mediocre shutter usually supplied with it and the disadvantages that go with low speed), a good buy can often be made at $3, $4, or $5. Where cost of film is an important factor, the purchaser should, of course, use one of the smaller sizes, or plan on adapting the camera to a smaller size of film, a procedure to be discussed in a later article. At this point, no doubt we should repeat and emphasize a matter to which we have often called attention and which, naturally enough, is not stressed in photographic journals—that the best buys in lenses are always in the slower speeds, and especially nowadays that films of high speed are readily available and the brilliant lighting of photoflash lamps can be brought to bear in difficult cases. The slower lenses which are of superior quality include *Goerz*, *Zeiss*, *Cooke*, *Bausch & Lomb*, or *Kodak* makes of f:6.3 or f:6.8, also the *Kodak Anastigmat* f:7.7 already mentioned. **Such lenses give better definition and better performance generally than the fast lenses, whether or not the fast lenses are stopped down to slower speeds for a given picture.** This is a fact established by careful tests and well known to real lens experts, but not to photo-amateurs—and never, of course, mentioned by dealers or stressed in lens lists or catalogs.

* * *

Abbreviated listing of dealers in secondhand cameras who normally have good stocks of cameras, including older and lower-priced models:

New York City

Willoughbys, 110 W. 32 St. One of the best of all American stocks of used cameras. Cameras plainly tagged with prices; prices about average; quality usually good.

Haber & Fink, 12-14 Warren St. Good stock; reputation for fair dealing.

H. Stern, Inc., 872 Sixth Ave. at 31 St. Pawnbrokers with unusual selection of better-grade used cameras and lenses.

Frank Tanham & Co., 3 Church St. Excellent source for older model used *Kodaks*, *Hawkeye*, and *Premo* roll-film and film-pack cameras, suitably priced for beginner and non-expert camerist. Some with fine lenses and shutters.

Washington, D. C.

Tendler's Pawnbrokers' Sales Co., 913 D St., N. W.

Boston

Claus Gelotte, Inc., 284 Boylston St.

Tremont Camera Exchange, 46 Bromfield St.

Chicago

Camera Exchange, 19 N. Wabash St. Believed best low- and moderate-priced stock in Chicago.

Los Angeles

Peterson's Camera Exchange, 356 S. Broadway. (Not investigated by CR, but recommended by a traveled photo-amateur subscriber.)

Readers of this very abbreviated list will note the emphasis given to New York stores. The fact is that from our investigations (which have not yet extended to the West Coast) it was clear that New York is easily the premier camera market of America, in variety and value of goods offered, and likewise in number of dealers having large stocks.

A popular brand of borax. Note the water-softening claim.

Borax

BORAX is an example of a commercial product long in wide sale which has been habitually advertised in a misleading way to consumers, apparently without arousing the interest of federal or state officials, or of better-business bureaus or others who are normally concerned with misleading advertising. Borax advertising has claimed that borax "makes any soap work better," "aids your soap to make 3 to 5 times more suds," "acts like sunshine on your clothes, making them white and fresh, even when dried indoors," and "softens the water." Studies made by CR and its chemist-consultants show plainly that the consumer should not accept these claims as true and dependable.

Instead of making soap "work better," as claimed, borax actually in some uses hinders the action of soap. While it is true that many brands of soap at one time contained borax, today it is doubtful whether any do except in minute quantities—for the purpose perhaps of continuing the sales-magic of a trade name in which the word "borax" has aroused the housewife's interest and attention. It is not true that borax "aids your soap to make 3 to 5 times more suds," nor that it "acts like sunshine." Such creations of the adman's fancy will appear quite ridiculous to many an alert and thoughtful consumer, who will wonder why, if these claims be true, everyone in the soap field hasn't rushed to take advantage of the wondrous merits of borax, and why any clothes-washing-machine and dish-washing-machine manufacturer would recommend any other type of detergent for use with his product.

As for the claim that borax "softens water," it compares so unfavorably with modern chemicals both in effectiveness and economy that its use for the purpose is wholly unjustified—a little like using silver solder for the repairing of kitchen tinware, or clock oil for the lubrication of a door hinge or lawn mower. It is interesting to note that one company has recently altered the claim for water-softening properties of its product so that the former statement on the package, "softens water," now reads "makes the water feel soft"—whatever that may mean. The product, however, is still labeled "water softener" elsewhere on the carton.

When a statement once gets into the popular language or popular literature, it often is repeated year after year and even decade after decade, just as errors in textbooks are copied by whole generations of college and high school textbook writers, who often have access to great storehouses of words about their science, yet are not in touch with the data of the science itself. In this way, erroneous statements have often been perpetuated for many years after their inaccuracy has been recognized and criticized by specialists. The false claim that borax is a water softener has thus been perpetuated, and continues to occur over and over again in newspaper articles and bulletins of state colleges and universities. (For example, "Borax is a good water softener . . ." p. 17, Home Laundry Management—Circular 363, Extension Service, Oklahoma A. and M. College; "Borax is one of the best alkalies for water softening . . ." p. 5, Improved Methods for Home Laundering—Circular 349, Extension Service, University of Arkansas; "Borax is well known and one of the best alkalies for softening water," Water Softeners—Brieflet 581, Extension Service, University of Vermont.)

Why then use borax? As a water softener for general household use, anhydrous tetra-

Application of Cellophane to Car Windows to Prevent Steaming and Frosting

MOTORISTS who drive a great deal in extremely cold weather often have serious annoyance and sometimes are exposed to an accident hazard from steamed and frosted car windows, particularly when a number of passengers are carried and the car lacks heater or other means for circulating air. Defrosters take care of the problem fairly well as to the windshield, and have some effect on side windows as well (because of the air circulation which they produce) but they often do not get into action until a considerable distance has been traversed, whereas steaming and frosting are often worse in the first few miles of travel.

Some observant fellow has discovered that a sheet of clear cellulose film, such as cellophane (DuPont), applied with an adhesive coating to the inside of the car windows and windshield will solve the problem, at least in part. (Glass frost shields have been used, but since they increase the hazard in case of accident, they are not recommended by the National Safety Council.) The type of transparent cellulose film or cellophane that is not moisture-resisting, has, unlike glass, a property that the physicists call hygroscopicity, i.e., the ability to absorb an appreciable amount of moisture from the surrounding air, and to give it up again when the air becomes drier. Thus the moisture that would otherwise condense on the glass and form a frost or steamy coating is absorbed into the film and remains invisible. If the moisture condition is serious and persistent, drops may form on the surface of the cellophane, but conditions would have to be rather exceptional, it seems, for the film to appear other than clear and dry.

Any person who is reasonably handy can apply a cellulose or cellophane film to his car windows according to the following directions. Probably the first sheet applied should be to one of the less important rear windows, so that practice can be had and any mistakes of manipulation made where they will do the least harm. The glass should be thoroughly cleaned before the cellulose film is applied.

Important: Use only the non-moisture-resistant type of cellophane.

Cutting the Film to Size

The sheets available at ten-cent stores are usually 20 x 30 inches in size. When wet they stretch slightly in length but quite noticeably in width. Since the film is cut when dry and is applied wet, allowance for stretch must be made in cutting to size.

First make a full-size pattern of the window or windshield to be treated, using an ordinary sheet of paper. Mark the outline of the glass on the paper as it is held against the glass. Then trim the pattern about ½ inch smaller in length and 1¼ inches smaller in width. This is to allow for the stretch of the cellulose film and, of course, the larger allowance must be made in the direction in which the film shows the most stretch when wet. It is better to have the film slightly smaller than the glass, all around, than to have it so big that it must be trimmed later.

Between two sheets of paper lay one or two sheets of cellulose film, depending upon whether one or two duplicate pieces are to be cut. The paper and film are then cut out around the paper pattern. It is much easier

BORAX

sodium pyrophosphate[1] is much to be preferred. For an alkaline cleanser for use in a dishwashing machine or for washing windows, a mixture of three or four parts of trisodium phosphate with one part of tetrasodium pyrophosphate serves very well.[2] Certainly these low-priced and effective materials will serve most housewives much better than the more expensive and ineffective borax.

[1] Some sources of supply for anhydrous tetrasodium pyrophosphate, for consumers who are unable to obtain it locally are: Buffalo Chemical Supply Co., P. O. Box 240, Buffalo, N. Y., 85c plus postage for 5 lb; New Dorp Chemical Co., New Dorp, Staten Island, N. Y., $1.25 for 10 lb, postpaid within a distance of 150 miles; G. S. Robins & Co., 126 Chouteau Ave., St. Louis, $5.75 plus freight for 100-lb bag.

[2] Sources of supply for this mixture of tetrasodium pyrophosphate and trisodium phosphate are: Buffalo Chemical Supply Co., $1 plus postage for 10 lb; New Dorp Chemical Co., $1.25 for 10 lb, postpaid within a distance of 150 miles.

to cut and handle the film between papers than by itself. Cut a piece of film for each glass to be coated and have it ready to apply.

Applying Film to the Glass

Prepare a pint or preferably a quart of thin glue solution by dissolving liquid glue (such as *Le Page's*, *Iron Glue*, etc.) in warm water in the proportions of one tablespoonful of glue to a pint of water. Pour this solution into a large flat pan. Put the cellulose film in the pan, wetting both sides, and let it soak for a couple of minutes. Lift it from the pan and let it drip for a moment while a helper straightens out the laps and folds. Holding the film in the same position it is to have on the inside of the glass, first lay the film against the glass at the top edge and slide it into position, while allowing the lower part to hang as it will.

Then take a rubber squeegee, such as a windshield wiper blade (a blade cut in two is even handier), and smooth out the film, pressing firmly but not too hard on the squeegee, to force out the surplus glue and air bubbles. Gradually work from the top center both ways and then toward the bottom until the whole sheet is snug against the glass. Be careful to avoid wrinkles, for if the film is once creased with the squeegee, the crease will never come out. To avoid creasing, lift the sheet from the bottom as necessary and let it go back against the glass, of itself. With a little care and practice a perfect job is possible, but not necessarily the first time for there is a little knack to smoothing the film down just right.

As soon as the film is squeegeed all over and all edges are tight, the surface is rinsed with a wet sponge to remove the glue solution from the exposed surface; otherwise it would be cloudy from the glue (the glue between the glass and the cellulose film is nearly invisible because the glue layer is very thin). It is suggested that this work be done by daylight, for any cloudiness or small defect might not be seen by artificial light. After the film and glue are completely dry, the edges can be sealed with a clear cellulose-base cement such as *Duco* Household Cement, to protect the water-soluble glue at the edges, from loosening.

Precautions

As the reader will appreciate, the cellulose film is not durable and cannot be wiped without scratching, nor is it desirable to wash or wet it after it is once dry. Therefore it must be recognized as a rather delicate, non-permanent coating. When the car is washed, caution the attendant not to touch or try to clean the inside of the windows. A scratched cellulose film on the windshield is especially bothersome at night, due to approaching lights, and will show blur and multiple reflections that interfere with clear vision. If the work is carefully done, the effect on visibility, while detectable, especially when driving against many street and building lights, is small, small enough to be of no great practical importance to the country or suburban driver.

Removing the Film

Since the film is a temporary expedient it should be removed in the spring when it is no longer needed. Removing it is a very simple matter. Simply soak it off using warm water. It will easily pull off in strips if sufficiently wet, and if time is allowed. A razor blade scraper will help to remove any small pieces which may remain.

Convenient Kits Available

Both Sears-Roebuck and Montgomery Ward sell convenient kits for applying cellophane to automobile windows. The kits comprise enough cellophane sheets for all the windows of an automobile, adhesive, directions for use, and necessary tools for application. Sears' kit also includes edge-sealing cement. A disadvantage of these kits is that the cellophane sheets are too small to permit covering the entire windshield. When the entire windshield is not covered the view is somewhat obstructed at the edge of the cellophane when the edge is sealed in accordance with the directions accompanying the Sears' kit. The price is 65 cents plus postage.

Conclusions

While the method cannot provide lasting protection against frost, it works rather remarkably well, and will, it is believed, be satisfactory under usual conditions. However, there may be certain extreme conditions of humidity and temperature and failure to provide sufficient ventilation in the car when it will not give the expected performance.

The foregoing has been written chiefly on the basis of detailed suggestions contributed by an engineer-subscriber and some brief tests carried out by CR.

What Makes a Good Piano?

By William Braid White, Mus. D.

The first part of this article, which appeared in the December Bulletin, discussed some of the details of construction of the classical and popular types of pianos, and listed the properties which might be expected of the action of the classical grand pianos.

Pianos of the Classical Type

The 7-foot grand piano should possess the following characteristics in greater or lesser degree:

1. A tone quality that is powerful and majestic in the bass region, which should also be distinguished by richness in harmonics, or tonal complexity; a fine singing capacity, but less complex tonal character in the middle region; glittering and pearly tone quality in the high treble.
2. Action and hammers that are responsive to the demands of the pianist, so that the loudness and quality of the evoked sounds may be controlled through a wide range of expression.
3. An action rapid and sensitive, capable of producing very faint sounds easily and certainly, and at speeds as great as or greater than the most skilled fingers can command.
4. Practical evenness of weight of touch (even resistance of key and mechanism to finger pressure) throughout the scale, giving a tone with pressure as little as 2½ ounces in the high treble and not over 4 ounces in the low bass.
5. Tonal and mechanical properties that never become exhausted but are capable of fulfilling all demands of the pianist. This capacity to lend itself, as it were, to the player's requirements is common to all fine musical instruments, from violins to contrabasses.

What now can we say about the popular types of piano and how do they compare with the classical instrument that has been described in some detail in the foregoing?

Pianos of the Popular Type

Obviously the principal physical characteristic of the popular pianos is their very small size. Nearly all the dimensions are markedly reduced. The ivory and ebony finger plates of the keys, and the pedals, however, are necessarily made to the same dimensions for all pianos. The lengths of the strings from about an octave above middle C to the extreme right of the keyboard, that is to say in the high treble region, also are almost the same in pianos of all sizes. But in the middle and left-hand regions of the keyboard there are important differences between the classical and the popular types of piano.

There is no magic by means of which a bass string 38 inches in length, for example, can be made to emit a musical sound having the beauty or power of the sound given by a string 60 inches in length. The designer and the skilled workmen may juggle with innumerable variations of weight, tension, and so on, but the general laws of string behavior cannot be circumvented. The very small horizontal or vertical piano, so popular today, necessarily starts under a certain tonal handicap. This must be kept in mind from the start. When properly designed and built, the small popular piano should possess a pleasing and satisfactory tonal output throughout 4½ octaves of the musical scale, counting from the highest treble towards the bass, but it is necessarily and inherently deficient through the remainder of what may be called the tenor and bass regions. It need not be grossly imperfect even in these regions, but it cannot and should not be expected to possess tonal properties equal to those of the classical 7-foot piano.

On the other hand, the action of the very small vertical piano should be at least as responsive as it has ever been in vertical (upright) pianos. The action should be capable of being maintained in perfect adjustment, but it can hardly be so sensitive as that of the horizontal (grand) piano. It must be granted, moreover, that the action in new small vertical pianos calls for skilled attention at regular intervals, by competent experts. Even the smallest and otherwise generally least satisfactory miniature grands, however, may possess the characteristically responsive ac-

tion of the classical grand piano.

Let there be no mistake about it. If one cannot, whether because of the floor space available or because the cost is beyond one's means, invest in one of those classical chefs-d'oeuvre that have been described here in some detail, then one must be willing to accept something less satisfactory, musically speaking. But one need not, and should not, accept a piece of trash. (Unfortunately, some of the new small pianos deserve precisely that description.) What then may one rightly expect from the small popular "spinet" piano at its best? Well, something like this:

A beautifully designed case that by current standards will be called good looking or correct, and will fit, according to the design, into almost any small room.

A tonal output less powerful, less impressive by a good deal, than one should expect from the classical type of piano, but capable, nevertheless, of filling a room no larger than 15 feet square or of a volume of not more than, say, 2500 cubic feet.

A tonal output reasonably even, mellow, and with fair singing quality (i.e., power to sustain the tone while the key remains depressed) throughout two-thirds of the scale; tone production, however, that is definitely inferior in the region of the bass and probably never quite satisfactory to a cultivated ear.

Satisfactory action, giving fairly elastic response to touch, to the extent, at best, of perhaps three-fourths the rapidity of repetition and ability to produce very faint tones that are characteristic of the classical grand piano.

As to price, $500 to $600 should buy the best that can be offered at present within the physical dimensions of the modern small vertical piano. Based upon current data as to quality and cost of materials and workmanship, it may be said that at this writing the characteristics of a good "spinet-type" piano just discussed can hardly be expected at prices under $400.

Tests for Pianos

The question is often asked: Is it possible to apply to a piano objective tests comparable with those that may be applied to a refrigerator, a heating plant, or an automobile? Since a piano is designed and constructed as a machine, to furnish at command the 88 tones of its scale, with the possibility of wide variations in loudness and quality, one may properly demand to know whether it does this in a satisfactory manner. The difficulty lies in defining the word "satisfactory." Taste in matters of musical tone varies widely and, in general, rests at a low level, no doubt because of a certain superficiality of musical training and culture. The following suggestions, nevertheless, are offered in the conviction, based on actual data and experience, that they are both practicable and, within obvious limits, reliable.

Weight and evenness of touch can be tested by using a set of weights ¼, ½, 1, 2, and 3 ounces, obtainable from any photographic supply store as part of an outfit used by amateur photographers for weighing chemicals. The weights may be added to a key until it is depressed. If the total weight averages not more than 4 ounces in the bass, 2¾ ounces in the middle, and 2½ ounces in the high treble, the action may be regarded as well adjusted for "resistance." Large differences between neighboring keys give evidence of poor workmanship.

In order to obtain results at all reliable, the weights must be applied at the same places on the keys as the fingers normally seek, namely, at points one inch inside the front edges. This rule applies to both black and white keys.

To test the repetition of a piano action, that is, to find out how rapidly a hammer can repeat its blows upon its string without being blocked or coming to a stop, one may tap a key alternately with the index fingers of the two hands, first very gently but rapidly, then with more power and still more rapidly. If the action fails to repeat as quickly as one might wish to have it do in rapid passages, when the amount of force put upon the key is very slight and the tone consequently very faint, the adjustment of the action is not of the best. A very good action will repeat perfectly 8 to 10 times per second even when the touch is so light that the tones evoked are very faint.

Tonal tests: (a) Using a key pressure of moderate intensity and so producing a sound of medium loudness, test the duration of sound at three points—two octaves below middle C, around middle C, and two octaves above middle C. A classical piano may be

expected to give sounds which a normal ear will continue to hear probably for as long as 40 seconds, 25 seconds, and 10 seconds, respectively, at these points. A well-made piano of popular type, as defined, may be expected to give sounds that a normal ear will continue to hear for probably 30, 20, and 7 seconds, at the same points. Marked failure to reach these figures for duration of audibility, in the conditions outlined, probably indicates poor design of string scale or soundboard or perhaps both, and possibly also poor workmanship. The durations may be measured with any good seconds-hand watch and should be taken from the moment the sound is heard until it can no longer be heard.

(b) Take a low bass tone, for example, *C* (C16) two octaves below middle *C*. Depress it so gently that the hammer does not strike a sound out of the string. Then still holding down the key, strike strongly the key one octave above and at once release it. The octave sound will now be heard floating out from the lower *C* string. Again, depress the low *C* key as before. Strike the *G* (G35) 1½ octaves above, release it and listen for its tone to come from the low *C* string. Depress the low *C* key again, as before, strike the *C* (C40) two octaves above, release and again note the effect. Go on in this way until *C* 28, *G* 35, *C* 40, *E* 44, *G* 47, *B* flat 50, *C* 52, *D* 54, *E* 56, *G* 59 have been struck. If each of these produces an audible response from the C 16 string, which has been held down (the response will necessarily become feebler as one ascends in the scale), the scale may, in general, be considered well designed and constructed.

Musicians will recognize the sequence of tones as representing the natural series of harmonics given out by a piano string and may wonder at the notation employed. It is arrived at by simply calling the lowest key of the piano A1 and then numbering the successive black and white keys in order. Thus, the C's of the piano become, serially, C 4, C 16, C 28, C 40 (middle C), C 52, C 64, C 76, and C 88. The violin A is A 49, and so on. For the benefit of musicians, however, the regular musical notation is also given.

Of course, when the prospective buyer has the means to buy a classical grand piano by a maker of the first rank, he may take for granted a fair or good degree of approximation to the performance as herein described—in which case his choice will come to rest finally upon personal convictions as to the tonal and mechanical virtues of some individual instrument. On the other hand, when the consumer has to rely only upon the unconfirmed statements of a clever salesman, the tests that have been suggested should be of use.

Care of a Piano

Something should be said on the subject of care and maintenance. A piano is an elaborate and delicate instrument. The strings, pulling with a total force of some 17 tons, exert a pressure at right angles to the arched soundboard of light spruce wood, amounting to not less than 500 pounds. The influence of atmospheric temperature and moisture on such a delicately balanced structure must always be great, considering that the material used in its construction is mainly wood.

Every piano, especially at its soundboard, absorbs much moisture from the air during the hot, humid summer months. As a result, the soundboard swells upwards and so puts more stress on the strings, sending the piano sharp and out of tune. Conversely, during the winter months of artificial and usually dry heat, the moisture that has been soaked up during the summer is evaporated so that the soundboard shrinks, sags, and relaxes its pressure against the strings, sending the piano flat and out of tune. Obviously this means that a piano calls imperatively for regular and frequent tuning by a competent expert.

Similar considerations apply to the action. This mechanism, composed of some 8000 separate parts adjusted with care and precision, is bound, with use, to "settle," so that the felts become compressed, the pins on which the moving parts turn begin to work tightly in their bushings, and so on. Many persons who love the piano and play it with enthusiasm do not sufficiently realize that they are dealing with an elaborate and delicate machine that is bound to go out of tune and out of adjustment, with use and time.

[Please turn to page 24]

Chemistry for Photographers

A Book Review

Chemistry for Photographers, by Allen R. Greenleaf. Published by the American Photographic Publishing Co., Boston, Mass. 1941. 177 pages. $2.

IT IS THE AIM of every amateur photographer worthy of the name constantly to improve his work. To do this he often realizes that he must increase his knowledge of films, papers, developers, etc., and of darkroom technique. Most substantial improvement in photographic abilities calls for better understanding of the processes involved, that is, insight into the physics and chemistry of photography.

Many books have been written on the chemistry of the photographic art, but most of them, unfortunately, have been written for chemists or for research specialists. There has been real need for a well-written, understandable book written, not by a chemist as such, but by a chemist interested in the art as well as the science of photography. Mr. Greenleaf in his new book has done an admirable and workmanlike job of filling this need. The author is a chemical engineer who knows photographic techniques, has done much research in the field, and writes in a very understandable and interesting way.

Those amateurs who have stayed away from photographic chemical problems because of a lack of specialized chemical knowledge or previous training should have no difficulty with Greenleaf's clearly written explanations. On the other hand, the advanced amateur would not find this book too elementary for his needs, but would, we feel sure, come to depend on it as a handy reference work and a valuable compilation of important facts often hard to locate in a hurry when needed.

The book is not limited solely to chemical problems of photography. The whys and wherefores of all of the important photographic processes, including development, hardening, fixing, washing, intensification, reduction, toning, etc., are discussed at sufficient length to enable the majority of readers to find the answers to questions of technique that are little or only partially understood by the non-specialist. Fine-grain developers are covered, with adequate and needed debunking of the advertising claims so often made. A formulary and a section on weights and measures are included.

In short, we feel sure that this is a book which has a place in the photographic library of every amateur interested in increasing his skill and knowledge of the photographic science and technical art.

WHAT MAKES A GOOD PIANO?

[*Continued from page 23*]

A good piano is an expensive instrument. Its owner should not hesitate to spend a few dollars three or four times a year to have it kept in the best condition. Perhaps, if more interest were taken by those who supervise education in this country to train young people's ears to musical perception, we should not have the lamentable and all too common experience of listening to musicians who are willing to play pianos grossly out of tune.

Every piano, large or small, classic or popular in type, costly or low priced, should be tuned every 3 months and mechanically adjusted every 12 months by a competent tuner. A piano will stand a great deal of neglect and abuse, but it will inevitably show the effects of ill treatment in the shortening of its useful life and good performance, in the deterioration of its tonal output, and in loss of its musical and mechanical efficiency.

Corrections and Emendations to Consumers' Research Bulletin

Annual Cumulative Number, September 1941

References on Cosmetics Col. 152

Cosmetics and Allied Preparations (American Medical Association, 535 N. Dearborn, Chicago) has now been revised. The new edition, renamed "Cosmetics," is priced at 20c. It deals with objectionable features of certain cosmetic preparations on which the information obtained is of relatively recent date, namely, during the last 10 years.

Obesity Cures. This pamphlet is now out of print and therefore should be deleted.

Watches Col. 163

Delete fourth paragraph beginning, "On request accompanied by a 3-cent stamp, CR will (without responsibility on CR's part) put subscribers in touch with a dealer in secondhand watches. . . ." The dealer who has been supplying secondhand watches to subscribers has decided to discontinue the service. He has found that subscribers have wanted to correspond at length about purchases; this has been burdensome and costs of correspondence and other overhead costs have been such that the results have been too meager from a profit standpoint. At the present time we do not know of any dealer we can recommend in this connection. If any qualified dealers care to undertake the supplying of secondhand watches on mail orders, we shall be glad to discuss the matter by correspondence with a possible future listing in mind.

Radio Sets Col. 169

Delete, for the time being, the name of E. Mittleman, 168 Washington St., N.Y.C., as a radio serviceman in a position to build high-fidelity amplifiers; several subscribers have reported difficulties in obtaining answers to correspondence addressed to him.

Radiator Rust Preventives (for Automobile Radiators) Col. 266

While sodium chromate in the amount of 0.01% by weight of solution has been found to be an effective corrosion inhibitor, in actual practice a higher concentration seems desirable, in order to provide an allowance for varying chemical content of water supplies in different parts of the country and for other contingencies. Various commercial anti-rusts for automobile radiators, when used according to the manufacturers' directions, have been found to give concentrations of sodium chromate or of sodium bichromate of from 0.03% to 0.3%. In the opinion of CR, 1 ounce of sodium chromate is a suitable amount to add to the radiator solution for the average automobile. This amount will give a concentration of approximately 1 part of chromate in 700 parts of water, or 0.15%. If sodium bichromate is more easily obtainable than sodium chromate, 1 ounce of sodium bichromate (same as sodium dichromate) plus 1/3 ounce of sodium hydroxide (lye) may be used. The radiator solution is given a yellowish or orange color by use of the chromate or bichromate rust inhibitor. Disappearance of this coloration indicates that it is time to add more inhibitor.

Special Foods Cols. 333-334

The packer of the following products has advised that they have been discontinued; listings should, therefore, be deleted: *Clapp's* Original Puree of Apricots, *Clapp's* Sieved [Strained] Wax Beans, *Clapp's* Strained Tomatoes, *Clapp's* Baby Soup, and *Clapp's* Unstrained Vegetable Soup.

Index Page 231

Entry under "Cod-liver Oil" should refer to Jan. '41, pp. 14-15, not June '41, pp. 14-15.

Index Page 240

Entry under "Vitamin preparations, hazards in overuse of" should refer to col. 6, not col. 7.

HOME REPAIR AND MAINTENANCE, PART II

[Continued from page 14]

of doubt the old paper should be removed. Place a canvas on the floor, tight against the wall, to catch drips, and soak the paper with warm water by means of a sponge, soft brush, or sprayer. The paper will peel off when it is well soaked. Addition of a chemical known as a wetting agent, such as *Aerosol* (American Cyanamid & Chemical Corp.), for example, is said to help in loosening the paper. (Only a tiny amount is required for a gallon of water.) Obstinate places are scraped with a putty knife. When waterproof wallpaper is to be removed, its surface must be abraded by rough sandpapering to permit the water to soak through. After the wall has dried, smooth out any rough spots with sandpaper. Once cleaned and smooth, the wall or ceiling is ready for repapering.

Repapering is not difficult but those who wish to try it for the first time are advised to procure a good reference and to study the proper procedure for preparing paste, trimming the paper, matching the pattern, fitting around openings, and other detailed techniques too lengthy to be described here. Instructions for paper hanging may be found in **The Handy Man's Handbook** ($1) by C. T. Schaefer, Harper & Bros. (N. Y. City), **Workshop Receipts,** Vol. III, and in **Make and Mend.** The two latter books ($1.67 each) are published by the Chemical Publishing Co., Inc. (N. Y. City). Useful instructions are also included with the tool kits for hanging wallpaper sold by the two large mail-order houses.

Grounds

Yards, walks, and yard equipment may have a definite bearing on the maintenance of the house itself. The yard should be sloped so as to drain water away from the house. Trees should be kept so trimmed that their limbs will not cause damage to or fall upon a roof or exterior of the house. Outdoor electric lines and poles must similarly be so located or guyed that they cannot do damage in case of storm or breakage due to sleet. Rods or pipes supporting radio antennas also need to be checked that they are not in a position to cause damage if they fall or give way. In a windy region, dense shrubbery should be prevented from abrading painted surfaces.

* * *

The foregoing discussion includes many points that should be of value to anyone studying the question of buying and reconditioning an old house rather than planning to build a new one. In the matter of reconditioning versus new construction, careful appraisals and examinations of livability will disclose which is the better for the individual consumer. To the sale price of the old house, costs of immediate maintenance and necessary remodeling (which often run very much higher than the prospective purchaser is likely to assume) should be added for a fair comparison with new construction. The cost of future maintenance for each should then be estimated, for that is always an important item in the cost of owning a house.

Contributions[1] to CR Not Taxable

IT has been suggested that we answer, via the *Bulletin*, the question as to whether contributions made to Consumers' Research, Inc., for its work and studies for ultimate consumers are deductible for income tax purposes. We are glad to give the following information, which will be of interest to those subscribers who may have been in doubt as to whether they are allowed to make such deduction from their income in arriving at their taxable net income.

The Treasury Department, Washington, D.C., in a letter advised us as follows, with respect to contributions made to Consumers' Research, Inc.:

> Contributions[1] to your organization by individual donor are deductible by such individuals in arriving at their taxable net income in the manner and to the extent provided by section 23 (o)[2] of the Revenue Act of 1938, or section 23 (o)[2] of Chapter 1 of the Internal Revenue Code.

Editor's Notes:

[1] Beyond the subscription price.

[2] Referring to the right of deduction from income of contributions to non-profit corporations, foundations, etc., organized and operated exclusively for certain purposes (including scientific and educational).

CONSUMERS' DIGEST

The enlightened consumer is a necessary encouragement to merchandising integrity.

In the Groove

With Ratings of Phonograph Records

By

WALTER F. GRUENINGER

Critical listening to twenty-one records sold exclusively by Sears Roebuck, most of which are anonymously recorded, was an interesting experience this past month.

The 12-inch symphonic Sears-Roebuck *Silvertone* records are catalogued at 59 cents, the 10-inch at 39, the 10-inch *Conqueror* at 25 cents plus postage. If you can buy them at a Sears-Roebuck retail store's record counter, you will likely pay more.

It may be just as well, however, to purchase by mail. Two large stores which I visited evidently had only a few *Silvertone* and no *Conqueror* discs in stock. The clerk in one store invited me to hear them on an inferior portable phonograph, and the clerk in the other store forbade my touching the records or even examining the label while he reluctantly agreed to play on a low-grade, $25 radio-phonograph set only **part of one record side** from the twelve sides I had chosen for hearing. If this experience should by chance be shared by others, the sales of *Silvertone* and *Conqueror* discs at the stores' record counters may not be extensive. A mail order to a warehouse 100 miles off resulted in delivery of the records in four days.

The fidelity of *Silvertone* records can be recommended. The surface noise is low, too. In these respects *Silvertone* discs are not inferior to *Victor Red Seal* and *Columbia Blue Label*. In fact both clerks informed me that *Silvertone* discs were manufactured by Columbia.

Interpretation of the music, therefore, is the determining factor in arriving at the over-all value of *Silvertone* as compared to other discs. None of the *Silvertone* records that I have heard can be rated poor in this regard. Rather, between them and the best recording of the same selection stands only a small degree of artistic superiority. Unless direct comparisons are made, such as I made on a high-fidelity reproducer by playing the *Silvertone* disc and immediately after, the one by Victor or Columbia, I doubt that most laymen—or many musicians—would find serious fault with the performance on *Silvertone*.

Of thirteen 12-inch *Silvertone* discs recorded by an anonymous symphony orchestra that I compared with Victor and Columbia recordings of the same selection, I believe *Finlandia* (Silvertone 57) and the *Ballet Music from Faust* (Silvertone 66) are on no account inferior to any other recording of this music, regardless of price. Furthermore, excepting for one brief passage on side No. 1, between 4½ inches and 4¾ inches from the center when all of the players are not precisely on the beat, Brahms' *Academic Festival Overture* (Silvertone 61) stands above any other recording of this composition.

Less commendable, however, are the interpretations of the other *Silvertone* records investigated. Since the experienced collector has found it pays in enjoyment to buy the best available combination of interpretation and recording, the following suggestions are offered:

In place of the sluggish *Prelude to Act III from Lohengrin* (Silvertone 53) I prefer Toscanini's exciting performance (Victor 14007). Instead of the tame *Ride of the Valkyries* on the other side, I prefer Stokowski's spirited performance (Victor M248).

Instead of the routine *Danse Macabre* (Silvertone 70) I choose Stokowski's brilliant performance (Victor 14162).

Instead of the uneven *Poet and Peasant Overture* (Silvertone 80) I recommend the dashing Boston Pops performance (Victor 11986).

Instead of the run-of-the-mill rendition of

Dance of the Hours (Silvertone 65) I suggest Stock's eloquent performance (Columbia 11621).

Toscanini's *Overture to the Magic Flute* (Victor 15190) stands high above the performance on Silvertone 54.

Abbreviated versions of Strauss' *Tales from the Vienna Woods* and *Blue Danube Waltz* I do not favor on any record, including Silvertone 55. Although the definitive recording of these light masterpieces has not yet been made, I prefer *Vienna Woods* (Victor 8652) and *Blue Danube* (Victor 8650).

Rossini's great descriptive *Overture to William Tell* deserves a performance of all the notes, not a cut version as given on Silvertone 60. You can get all the notes and a superb performance on Columbia X60.

The selections from *Carmen* (Silvertone 64) compete with one of the greatest two-record sets in the Columbia catalogue (X144). Engineers use this set, frequently, for testing the fidelity of equipment because the recording is so extraordinarily full and clear. Music lovers use it because it presents *Carmen* at its best.

The *Overture to Oberon* recording (Silvertone 72) falls short of another recording (Columbia 69410) because it, also, is competing with England's greatest conductor, Sir Thomas Beecham, as are the two sets above.

The *Overture to A Midsummer Night's Dream* (Silvertone 74) does not equal another performance, Victor 11919/20, which is not as good as it should be, either.

In the 10-inch *Silvertone* group, I found satisfactory but not outstanding the salon orchestra rendition of *Dark Eyes* and *Two Guitars* (Silvertone 510), *Southern Roses* and the *Skaters* (Silvertone 502), the *Old Refrain* and *Liebesfreud* (Silvertone 567), the vocal performance of *Indian Love Call* and *I'll See You Again* (Silvertone 562). These, as a whole, approximate the light music you frequently find on *Decca*, *Victor Black Label*, *Okeh*, *Brunswick*, and *Columbia* at 35 cents and 50 cents a disc.

The surface noise of the *Conqueror* records listed at 25 cents—all artists named—I found greater than that of *Silvertone*. Moreover, the fidelity of recording in some cases did not approach today's finest. The band combination of *Washington Post March* and *Stars and Stripes Forever* (Conqueror 9405) and the vocal combination of *There's an Empty Cot* and the *Last Roundup* (Conqueror 8191) rate intermediate, for performance as well as for recording. Definitely not recommended for performance are *Rock of Ages* and *Old Rugged Cross* sung with Hawaiian guitar accompaniment (Conqueror 7714) and *Traumerei* and Schubert's *Ave Maria* played by an organist (Conqueror 9542). Victor lists two violin solos and one cello solo of *Traumerei*, all satisfactory. Schubert's *Ave Maria* is beautifully sung by Elizabeth Schumann (Victor 8432).

THE anonymously performed symphonic and operatic records offered by the Chicago Society for Music Education and similar groups at approximately 59 cents, I report in response to inquiries, appear to consist principally of discs discussed in CONSUMERS' RESEARCH BULLETIN and CONSUMERS' DIGEST, both March 1941. The symphonies, on the whole, are more desirable than the scattered operatic passages. Yet, in every case a preferable interpretation and recording has been issued by Victor or Columbia.

Several of the symphonies included in the present offer were not previously listed. Among them, Tschaikowsky's *Symphony No. 6 (Pathétique)* is definitely third rate in performance and recording. Get Furtwängler's excellent performance and recording on Victor M553. The mediocre performance of Beethoven's great *Symphony No. 3 (Eroica)* should be avoided in the "Chicago" set, too. Better are an intense performance from the NBC Studio 8H by Toscanini (Victor M765) and an expansive performance and tubby recording under Bruno Walter (Columbia M449); of the two I slightly prefer the Toscanini.

None of the "Chicago" symphonic sets meets the fidelity in recording, the standard of performance, nor the quiet record surface offered by Sears-Roebuck in their *Silvertone* symphonic series.

Ratings of Phonograph Records

List Prices Are Given Exclusive of Tax

Key: AA—highly recommended; A—recommended; B—intermediate; C—not recommended.

	Quality of Music	*Interpretation*	*Fidelity of Recording*
ORCHESTRA			
Bach-Stokowski: *Mein Jesu.* All-American Youth Orch. under Stokowski. 2 sides, Columbia 19004. 75c.	A	AA	A

	Quality of Music	Interpretation	Fidelity of Recording
Kalinnikov: *Symphony No. 1.* Indianapolis Symph. Orch. under Sevitzky. 8 sides, Victor M827. $4.50. First recording of a melodious 41-year-old Russian work suggested to those who already possess the standard symphonies.	B	AA	AA
Smetana: *The Moldau* (3 sides) & **Dvorak:** *Slavonic Dance No. 1* (1 side). Phil. Symph. Orch. of N.Y. under Walter. Columbia X211. $2.50. The main work presents a melodious description of scenes along the Moldau River. Interpretation stresses the leisurely folk quality of music. The long blurred passages on side 1 of test copy may stem from imperfect presswork, too frequent nowadays. If clear copies exist, fidelity would warrant higher rating.	A	A	B
Strauss: *Till Eulenspiegel.* Cleveland Orch. under Rodzinski. 4 sides, Columbia X210. $2.50. Disjointed performance of a humorous orchestral scherzo describing the career of a lovable mischief.	AA	B	A
Mendelssohn: *Capriccio Brillant.* Graudan (piano) (3 sides) & **Lully-Mottl:** *Minuet* (1 side). Minneapolis Symph. under Mitropolous. Columbia X197. $2.50. The *Capriccio* is an uninspired display piece.	C	AA	AA
Toch: *Pinocchio.* Chicago Symph. Orch. under Stock. 2 sides, Columbia 11665. $1.	B	AA	A
Tschaikowsky: *Marche Slave.* Cleveland Orch. under Rodzinski. 2 sides, Columbia 11567. $1.	C	AA	AA
Tschaikowsky: *Romeo & Juliet* (5 sides) & **Moussorgsky:** *Prelude to Khovantchina* (1 side). Cleveland Orch. under Rodzinski. Columbia M478. $3.50. *Romeo & Juliet*, one of Tschaikowsky's most ingratiating small works packed with drama and melody, gets a highly recommended performance and recording on Victor M347.	AA	A	A
Ballet Music. Anonymous Symph. Orch. 6 sides, Masterpiece Album A19. $1.24. Music from *Swan Lake, Copellia, Sylvia*, etc.	B	C	C
CHAMBER & INSTRUMENTAL			
Brahms: *Five Intermezzi.* Gieseking (piano). 4 sides, Columbia X201. $2.50. Poetic performances of short, lyric works that reflect sadness. The more appealing disc is Columbia 71173.	A	AA	A
Dvorak: *Humoresque* & **Nevins:** *The Rosary.* Primrose (viola). 2 sides, Victor 18222. $1.	A	B	B
Dvorak: *Quartet No. 3.* Busch Quartet. 8 sides, Columbia M480. $4.50. Lyric, Slavonic quartet performed more sensitively on Columbia M365.	A	B	A
Liszt: *Hungarian Rhapsody No. 2.* Sanroma (piano). 2 sides, Victor 13831. $1.	B	B	A
Schumann: *Quartet No. 1.* Roth Quartet. 6 sides, Columbia M454. $3.50. A favorite with lovers of romantic chamber music.	A	A	B
VOCAL			
Dykes: *Eternal Father, Strong to Save* & **Redner:** *Oh, Little Town of Bethlehem.* Crooks (tenor). 2 sides, Victor 2182. 75c.	A	A	B
Saint-Saens: *Samson & Delilah—Mon coeur s'ouvre a ta voix* & *Printemps qui commence.* Castagna (contralto). 2 sides, Columbia 71058. $1.	A	A	AA
Saint-Saens: *Samson & Delilah—Mon coeur s'ouvre a ta voix* & *Amour! viens aider ma faiblesse.* Anderson (contralto). 2 sides, Victor 18008. $1.	A	B	B
Great Songs of Faith. Anderson (contralto). 6 sides, Victor M850. $3.50. Famous selections from *The Messiah, St. Paul, Elijah, St. John Passion* by Handel, Mendelssohn, Bach.	AA	A	AA
LIGHT & SPIRITUALS			
Porter: *Let's Face It.* Hildegarde (soprano). 6 sides, Decca Album 291. $2.75. Tuneful music from a current Broadway show which falls short of this talented composer's and suave singer's best. *You Irritate Me So* and *A Little Rumba Numba* on Decca 23243 available separately at 75c form the best combination.	B	A	AA
Strauss: *Waltzes.* Kostelanetz & His Orch. 6 sides, Columbia M481. $3.50. If you don't object to hurried abbreviations you may enjoy these performances of *Blue Danube, Vienna Woods, Emperor, Vienna Life, Voices of Spring, Artist's Life.*	AA	B	A
Weill: *Selections from Lady in the Dark.*			
Hildegarde (soprano) Hannon (tenor). 6 sides, Decca Album 208. $2.75.	B	AA	AA
Lawrence (soprano). 6 sides, Victor P60. $2.	B	A	AA
Mediocre melodies that will soon be forgotten.			
Music of Vincent Youmans. Meyer Davis & His Orch. 8 sides, Columbia C77. $2.50. *Tea for Two, Carioca, Time on My Hands, I Want to Be Happy*, and 4 more show tunes that no longer enthrall me.	B	A	AA
The Chocolate Soldier. Stevens (mezzo-soprano) Eddy (baritone). 6 sides, Columbia M482. $2.75. Principally melodious tunes of an earlier era that suffer from Eddy's uninspired singing. Best disc, which may be purchased separately, *Sympathy* and *My Hero*, Columbia 4281.	A	A	A
From the Golden Pages of Melody. Raymond Paige's Young Americans. 8 sides, Victor G30. $3.50. *Let Me Call You Sweetheart, Donkey Serenade, Star Dust*, and 5 other light favorites in fancy orchestral arrangements that distort these tunes almost beyond recognition.	A	C	AA
Spirituals—I Want to Go Home, You're Tired Chile & *Lil'l Boy.* Hayes (tenor). 2 sides, Columbia 17275. 75c.	A	AA	AA

Ratings of Motion Pictures

This department of CONSUMERS' DIGEST endeavors to supply the critical consumer with a digest of opinion from a number of reviews, ranging from the motion picture trade press to Parents' Magazine which rates motion pictures not only on their quality as entertainment, but on their suitability in various aspects for children.

It should be emphasized that the motion picture ratings which follow do not represent the judgment of a single person but are based on an analysis of the reviews appearing in some 25 different periodicals. (For example, "Skylark" was recommended by 2 reviewers, rated intermediate by 7, and not recommended by 5.) The sources of the reviews are:

America, Baltimore Sun, Box Office, Bridgeport (Conn.) Herald, The Christian Century, The Exhibitor, Harrison's Reports, Liberty, Mademoiselle, Motion Picture Herald, Motion Picture Reviews (The Women's University Club of Los Angeles), *National Historical Magazine, National Legion of Decency List, Newsweek, The New Yorker, New York Herald Tribune, New York Sun, New York Times, New York World-Telegram, Parents' Magazine, Releases of the D.A.R. Preview Committee, Scribner's Commentator, Successful Farming, Time,* and *Variety (daily).*

Periodicals will be added to this list from time to time as future exploration of the subject brings to light other journals offering critical appraisals of motion pictures which appear to be deserving of the intelligent reader's consideration.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in war time
wes—western

A	B	C		
—	2	4	**A Girl Must Live**	*rom AY*
3	9	1	**All That Money Can Buy**	*dr A*
—	4	—	**All-American Co-Ed**	*mus-com YC*
—	8	8	**Aloma of the South Seas**	*rom AY*
—	2	5	**Among the Living**	*mys A*
—	5	—	**Apache Kid, The**	*wes AY*
1	9	4	**Appointment for Love**	*com A*
—	3	—	**Arizona Bound**	*wes AY*
—	4	2	**Bad Man of Deadwood**	*mus-wes AY*
1	3	1	**Bad Men of Missouri**	*wes-rom A*
—	8	4	**Badlands of Dakota**	*wes AY*
—	10	4	**Belle Starr**	*mel AYC*
—	11	—	**Birth of the Blues**	*mus-com AY*
—	1	4	**Blonde from Singapore, The**	*mel A*
1	3	—	**Blondie in Society**	*com AYC*
—	4	2	**Blues in the Night**	*mus-dr A*
1	1	6	**Bowery Blitzkrieg**	*cri AY*
—	—	3	**Bullets for O'Hara**	*cri-rom A*
—	6	2	**Burma Convoy**	*mel AY*
—	9	4	**Buy Me That Town**	*com A*
—	2	1	**Cadet Girl**	*mus A*
—	5	2	**Charlie Chan in Rio**	*mys AY*
—	9	1	**Charlie's Aunt**	*com AYC*
—	7	4	**Chocolate Soldier, The**	*mus-com AY*
—	1	3	**Citadel of Crime**	*cri A*
—	2	1	**Confirm or Deny**	*war-mel A*
1	1	3	**Cracked Nuts**	*com AY*
—	—	3	**Criminals Within**	*war-cri AYC*
—	4	3	**Date with the Falcon, A**	*mys AY*
—	2	4	**Deadly Game, The**	*war-mel A*
—	1	2	**Death Valley Outlaw**	*wes AYC*
1	3	—	**Design for Scandal**	*com A*
—	3	—	**Devil Pays Off, The**	*war-mel A*
1	10	4	**Dive Bomber**	*war-mel AYC*
—	4	2	**Doctors Don't Tell**	*cri A*
—	2	1	**Double Trouble**	*com AY*
—	4	4	**Down in San Diego**	*cri AY*
—	3	—	**Down Mexico Way**	*mus-wes AYC*
—	6	1	**Dressed to Kill**	*mys AY*
—	3	1	**Driftin' Kid, The**	*wes AYC*
2	5	4	**Dr. Jekyll and Mr. Hyde**	*mel A*
—	9	5	**Dr. Kildare's Wedding Day**	*dr AY*
—	6	1	**Dude Cowboy**	*wes AY*
8	5	—	**Dumbo**	*car AYC*
—	3	4	**Ellery Queen and the Murder Ring**	*mys AY*
—	3	3	**Ellery Queen and the Perfect Crime**	*mys AYC*
—	9	2	**Father Takes a Wife**	*com AY*
—	8	3	**Feminine Touch, The**	*com A*
—	8	1	**Flying Blind**	*mel AYC*
1	4	2	**Flying Cadets**	*war-dr AYC*
—	3	—	**Forced Landing**	*mel AYC*
2	4	1	**Forgotten Village, The**	*doc A*
—	3	2	**Four Jacks and A Jill**	*mus-com AY*
—	2	4	**Frightened Lady**	*mel A*
1	3	1	**Fugitive Valley**	*wes AYC*
—	—	3	**Gambling Daughters**	*cri AY*
—	2	1	**Gauchos of Eldorado**	*wes AYC*
—	7	1	**Gay Falcon, The**	*cri A*
—	6	—	**Gentleman from Dixie, The**	*mus-mel A*
—	8	—	**Glamour Boy**	*mus-com AY*
—	1	2	**Go West, Young Lady**	*mus-wes AY*
—	7	5	**Great Guns**	*com AY*
—	5	—	**Gunman from Bodie**	*wes AYC*
—	4	—	**H. M. Pulham, Esq.**	*nov AY*
—	7	3	**Harmon of Michigan**	*dr AYC*
—	2	6	**Henry Aldrich for President**	*com AYC*
3	7	—	**Here Comes Mr. Jordan**	*com AY*
—	3	3	**Highway West**	*mel AY*
5	13	2	**Hold Back the Dawn**	*mel A*
3	2	1	**Hold That Ghost**	*com AYC*
1	10	9	**Honky-Tonk**	*mel A*
1	6	—	**Hot Spot**	*mys-mel A*

A	B	C		
8	5	1	**How Green Was My Valley**	*nov A*
1	3	1	**Hurricane Smith**	*mel AY*
1	8	5	**Ice-Capades**	*com AY*
1	2	—	**I Killed That Man**	*mys-mel AY*
—	13	3	**International Lady**	*war-dr AY*
—	7	5	**International Squadron**	*war-mel AY*
4	17	—	**It Started with Eve**	*rom AYC*
—	3	1	**Jesse James at Bay**	*mus-wes AYC*
—	4	—	**Kathleen**	*rom AYC*
—	5	3	**Keep 'em Flying**	*war-com AY*
—	3	4	**Kid from Kansas, The**	*mus-mel AY*
1	4	3	**King, The**	*com A*
—	2	3	**King of Dodge City**	*wes AYC*
—	1	3	**Kisses for Breakfast**	*com A*
3	12	2	**Ladies in Retirement**	*cri A*
—	6	6	**Lady Be Good**	*mus-com AY*
—	—	5	**Lady Scarface**	*cri A*
—	5	2	**Last of the Duanes**	*wes AY*
—	3	10	**Law of the Tropics**	*rom A*
—	4	2	**Let's Go Collegiate**	*mus-com AYC*
—	13	1	**Life Begins for Andy Hardy**	*com AY*
6	6	—	**Little Foxes, The**	*mel A*
—	3	—	**Lone Star Vigilantes, The**	*mus-wes AY*
1	5	1	**Look Who's Laughing**	*com AYC*
—	2	1	**Louisiana Purchase**	*mus-com A*
4	11	6	**Lydia**	*dr A*
5	8	—	**Maltese Falcon**	*mys A*
—	5	5	**Man at Large**	*war-mys A*
1	5	—	**Man from Montana**	*wes AYC*
1	7	2	**Married Bachelor**	*com A*
—	1	3	**Marry the Boss's Daughter**	*rom AY*
—	2	1	**Masked Rider, The**	*wes AY*
—	3	3	**Men in Her Life, The**	*dr A*
—	1	3	**Mercy Island**	*mel A*
—	3	5	**Mexican Spitfire's Baby**	*com A*
—	4	—	**Miss Polly**	*com AY*
—	1	5	**Mob Town**	*cri AY*
—	5	3	**Moon Over Her Shoulder**	*com A*
—	5	3	**Moonlight in Hawaii**	*mus-com AY*
—	2	1	**Mountain Moonlight**	*mus-com AY*
—	5	—	**Mr. Celebrity**	*com AY*
1	6	3	**My Life with Caroline**	*com A*
—	3	2	**Mystery Ship**	*cri AY*
—	7	8	**Navy Blues**	*mus-com AY*
—	4	6	**Never Give a Sucker an Even Break**	*com AYC*
3	3	3	**New Wine**	*biog-rom AYC*
—	8	7	**New York Town**	*rom AY*
—	4	1	**Niagara Falls**	*com A*
—	6	1	**Night of January 16, The**	*mys A*
—	6	4	**Nine Lives Are Not Enough**	*mys A*
2	13	5	**Nothing But the Truth**	*com AY*
—	3	2	**Obliging Young Lady**	*com AY*
—	2	1	**Officer and the Lady, The**	*cri A*
12	6	—	**One Foot in Heaven**	*dr AYC*
—	10	5	**Our Wife**	*com AY*
—	3	2	**Outlaws of the Desert**	*wes AY*
—	3	4	**Parachute Battalion**	*war-mel AYC*
—	1	3	**Perfect Snob, The**	*com AY*
—	6	4	**Pittsburgh Kid, The**	*mel A*
—	6	—	**Playmates**	*mus-com AYC*
—	1	2	**Prairie Stranger**	*wes AY*
1	2	3	**Prime Minister, The**	*hist-dr AY*
—	1	8	**Private Nurse**	*com A*
—	1	2	**Public Enemies**	*cri A*
—	1	2	**Quiet Wedding**	*com AY*
—	2	5	**Rags to Riches**	*cri AYC*
—	1	2	**Raiders of the Desert**	*mel AY*
—	4	1	**Rawhide Ranger**	*wes AYC*
—	3	1	**Reg'lar Fellers**	*com AYC*
2	2	—	**Reluctant Dragon, The**	*car AYC*
—	4	1	**Riders of the Purple Sage**	*wes AY*
—	4	1	**Riders of the Timberline**	*wes AY*
—	4	—	**Riding the Wind**	*wes AY*
—	6	—	**Ringside Maisie**	*mel AY*
—	2	2	**Rise and Shine**	*mus-com A*
—	1	2	**Roaring Frontiers**	*wes AY*
—	2	2	**Sailors on Leave**	*mus-com AYC*
—	5	2	**Scattergood Meets Broadway**	*com AYC*
—	4	2	**Secret of the Wastelands**	*wes AY*
6	5	—	**Sergeant York**	*war-biog AYC*
—	6	2	**Shadow of the Thin Man**	*mys A*
—	2	1	**Shepherd of the Hills**	*nov AY*
—	3	—	**Sierra Sue**	*mus-wes AYC*
—	6	2	**Sing Another Chorus**	*mus-com AYC*
—	2	1	**Six Gun Gold**	*wes AYC*
2	7	5	**Skylark**	*com AY*
—	5	1	**Small Town Deb**	*mel AYC*
1	5	6	**Smilin' Through**	*mus-rom AYC*
—	2	6	**Smiling Ghost, The**	*mys AY*
—	—	9	**South of Tahiti**	*mel A*
—	3	—	**Spooks Run Wild**	*mys AY*
4	1	1	**Stars Look Down, The**	*soc AY*
—	3	2	**Stick to Your Guns**	*wes AY*
—	2	1	**Stork Pays Off, The**	*com A*
1	5	—	**Story of the Vatican**	*doc AYC*
1	13	1	**Sun Valley Serenade**	*rom AY*
1	6	—	**Sundown**	*mel A*
—	2	1	**Sunny**	*mus-com AYC*
—	2	2	**Sunset in Wyoming**	*wes AYC*
3	6	2	**Suspicion**	*dr A*
—	7	5	**Swamp Water**	*mel-nov A*
—	6	1	**Swing It, Soldier**	*mus-com AY*
—	12	4	**Tanks a Million**	*war-com AYC*
2	6	—	**Target for Tonight**	*war-doc AY*
—	2	2	**Tarzan's Secret Treasure**	*mel AY*
1	11	2	**Texas**	*wes A*
—	4	1	**They Died with Their Boots On**	*hist-mel AYC*
—	2	3	**They Meet Again**	*cri AYC*
—	1	4	**This England**	*war-dr A*
1	7	10	**This Woman Is Mine**	*nov AY*
—	4	4	**Three Girls About Town**	*com A*
—	2	5	**Three Sons O' Guns**	*com AYC*
—	6	2	**Tillie the Toiler**	*com AYC*
—	3	3	**Top Sergeant Mulligan**	*war-com AY*
—	3	2	**Twilight on the Trail**	*mus-wes AYC*
—	2	2	**Two in a Taxi**	*cri AY*
—	5	4	**Two Latins from Manhattan**	*mus-com AY*
1	6	2	**Two-Faced Woman**	*rom A*
—	3	2	**Under Fiesta Stars**	*mus-wes AYC*
—	6	4	**Unexpected Uncle**	*com AY*
1	10	—	**Unfinished Business**	*com AY*
—	4	3	**Unholy Partners**	*mel A*
—	3	—	**Voice in the Night, The**	*war-mel A*
—	1	6	**We Go Fast**	*com AY*
—	3	5	**Weekend for Three**	*com A*
1	13	3	**Weekend in Havana**	*mus-com AY*
—	2	3	**West Point Widow**	*dr AY*
—	9	6	**When Ladies Meet**	*dr A*
1	12	1	**Whistling in the Dark**	*mel AYC*
—	6	3	**Wild Geese Calling**	*nov A*
—	4	4	**World Premiere**	*com AY*
2	14	1	**Yank in the R.A.F., A**	*war-rom AY*
1	3	4	**You Belong to Me**	*rom A*
5	12	—	**You'll Never Get Rich**	*war-mus-com AY*
—	3	1	**Zis Boom Bah**	*mus-com AY*